
WASHINGTON MONUMENT



PERMANENT SECURITY IMPROVEMENTS ENVIRONMENTAL ASSESSMENT



Responsible Agency:

National Park Service

Cooperating Agency:

National Capital Planning Commission

APRIL 2002

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ENVIRONMENTAL ASSESSMENT



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Abstract

The National Park Service has prepared an Environmental Assessment (EA) to address the proposed permanent security improvements for the Washington Monument and its Grounds. This EA addresses the impacts associated with the implementation of two build alternatives, together with a No Action Alternative. Mitigation measures are also provided for each of the alternatives. The information contained in this EA is required to fulfill National Environmental Policy Act and National Historic Preservation Act requirements for the proposed action.

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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

The National Park Service (NPS) proposes permanent improvements to the current temporary security systems at the Washington Monument and its Grounds and related revisions to the 1993 Development Concept Plan. These improvements would include the construction of a permanent visitor access/screening facility to replace the interim facility located adjacent to the Monument, and the installation of a permanent vehicle barrier system to replace the temporary concrete jersey barrier system. The program also includes general improvements to the Monument Grounds. These proposed improvements are the subject of this Environmental Assessment (EA).

The NPS has prepared this EA in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA, the National Historic Preservation Act (NHPA), and the NPS Director's Order-12 (DO-12). This EA was prepared in cooperation with the National Capital Planning Commission (NCPC). This EA seeks to determine the potential impacts and recommended mitigation measures related to the proposed action, as well as a No Action Alternative. The EA addresses short-term construction-related impacts and long-term operational effects, as well as the cumulative impacts that would result from this and other projects within the study area.

Purpose and Need

The purpose of the EA is to help NPS decision-makers meet the objectives for the design and construction of a new permanent screening facility and vehicle barrier system. The objectives include improvement of security, improvement of visitor flow, provision of outdoor recreation opportunities, preservation of cultural landscape quality, improvement of accessibility, and preservation of the Monument structure and the Monument Lodge.

The existing concrete jersey barriers and the interim visitor security facility obstruct important vistas to and from the Monument and Grounds, intrude on the setting of this important national icon, and disrupt pedestrian circulation patterns. In addition, the current system requires heavy personnel staffing by the U.S. Park Police.

The pathways and facilities on the Monument Grounds also require updating. Walks and paths to the base of the Monument need to be made more accessible for persons with physical disabilities. Concession facilities on the site are inappropriately situated, and restroom facilities are inadequate. In addition, conditions currently do not allow the provision of educational and interpretive programs and visitor services to meet NPS standards. Finally, while waiting to obtain tickets or to ascend the Monument, visitors to the Monument are completely exposed to the weather.

Background

The Washington Monument, as the nation's foremost memorial to George Washington, is one of the most recognizable structures in the world. The Washington Monument Grounds have served and continue to serve as a vital public space in the Nation's Capital for celebrations, demonstrations, and recreation.

L'Enfant's Plan of Washington, DC, defined the physical and symbolic character of the Nation's Capital through its arrangement of buildings, structures, and views. The Senate Park Commission of 1901, known as the McMillan Commission, reconciled the Washington Monument with the L'Enfant plan geometry and its original siting for the Monument, as well as reserved the Monument Grounds for public enjoyment. Various iterations of design concepts for the Washington Monument and Grounds over the last 30 years have maintained the spirit of the L'Enfant Plan by maintaining the primary structures and monuments "as dominant elements in the landscape" and fitting the plans to the site's topography.

Alternatives Under Consideration

This EA addresses the environmental consequences of two build alternatives, as well as the impacts associated with maintaining the status quo, as follows: Alternative A (Below-Grade Alternative); Alternative B (Above-Grade Alternative); and Alternative C (No Action Alternative). The two build alternatives are intended to fulfill the security goals and objectives

for the Monument through the three types of physical improvements: (1) visitor screening facility, (2) vehicle barrier system, and (3) Grounds improvements.

Alternative A (Below-Grade Alternative) includes an underground screening facility and passageway to the Monument and a landscape vehicle barrier system of walled terraces and pathways. The existing above-ground visitor queuing area in the Monument plaza, the existing above-ground visitor screening facility located on the plaza immediately adjacent to the eastern side of the Monument, and the existing ticket distribution kiosk on the west side of 15th Street at Madison Drive would be removed. The Monument Lodge would be rehabilitated as the portal to a new underground visitor screening facility that would include a ticketing/lobby area, a security queuing and screening area, an educational and interpretive area, and other visitor services. An underground passageway would gently slope upward (less than 5 percent grade) to the Monument, connecting to the Monument's elevator core, which would be lowered one floor. A skylight would be installed to allow light into the screening facility and preserve the visual connection to the Monument. Under Alternative A, a graded system of walled terraces 24 to 30 inches high around the Monument would provide a barrier system for stopping moving vehicles. This system would replace the concrete jersey vehicle barriers. A berm, set back approximately 50 feet from the wall west of the Monument, would be used to screen the wall from the west. The existing grade at the Monument's grassy mound would be regraded to achieve a more uniform topography. Alternative A also includes improvements to the Washington Monument Grounds to include replacement of concrete at the plaza with high-quality pavers and benches. The walkways would be reconfigured for easier pedestrian flow and would be more accessible for persons with physical disabilities. The parking lot at 16th Street would be removed, which would allow the German-American Friendship Garden to be completed. The landscape would be augmented with new trees along the primary streets and other locations on the Grounds.

Alternative B (Above-Grade Alternative) includes a visitor screening facility located above-ground near the Sylvan Theater, away from the primary views and vistas. This new facility would replace the existing above-ground visitor queuing area around the perimeter of the Monument plaza, the existing visitor screening facility located in a temporary building on the plaza immediately adjacent to the eastern side of the Monument, and the existing ticket

distribution kiosk on the west side of 15th Street at Madison Drive. The new screening facility would consist of two buildings clustered in a less visible and less used part of the Grounds. The buildings would include ticketing and security procedures, an educational and interpretative display, and other visitor services. After visitors are screened, law enforcement personnel would escort the visitor groups in an above-ground, double-fenced security pathway to a double-locked door to be installed at the entrance to the Monument. Under Alternative B, security bollards would be placed at the 1.25-mile perimeter of the Monument Grounds to provide a barrier system that would stop moving vehicles, replacing the existing jersey barriers. Alternative B would also include restoration of the Monument Lodge and improvements to the Washington Monument Grounds. The asphalt paving at the plaza would be replaced with grass and a low granite wall. The parking lot at 16th Street would be removed, which would allow the German-American Friendship Garden to be completed.

Alternative C (No Action Alternative) would retain the existing structures and elements of the Washington Monument Grounds in their existing use and condition. There would be no new development or reconfiguration of facilities. Specifically, the No Action Alternative does not involve a return to a previous condition, but involves the continued use of existing temporary measures for Monument security, visitor screening and access, and vehicle barriers. The existing security system, which consist of NPS and U.S. Park Police personnel identifying, grouping, and isolating ticketed tour members in the plaza around the Monument, would continue under the No Action Alternative. At designated times, groups undergo screening in the interim structure located adjacent to the base of the Monument. The existing temporary concrete jersey barrier system would remain and be visible on the Monument Grounds and from West Potomac Park, the Ellipse, and the National Mall. Therefore, implementation of the No Action Alternative would necessitate further efforts to find a suitable replacement for the concrete jersey barriers. Under the No Action Alternative, paths on the Monument Grounds would remain unimproved in their current locations. The parking lot on the northern portion of the Grounds at 16th Street would remain and the German –American Friendship Garden would not be completed.

Environmental Consequences

Following a thorough review of potential resource disciplines, a few topics were identified for a more comprehensive analysis: Geophysical Resources (subsidence concerns); Visual/Scenic Resources (aesthetic concerns); and Visitor Experience (resource integrity concerns). Additional topics selected for analysis based on the potential for impacts include Water Resources, Vegetation, Air Quality, Noise, Historic Resources, Land Use Recreation, Infrastructure, and Transportation. For these resources, the following summary table of project impacts is provided for the three alternatives.

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
NATURAL RESOURCES Geophysical Resources Topography Soils Geology Groundwater	IMPACTS: <ul style="list-style-type: none"> Minor cut and fill on the Monument mound for terraced walls and a more uniform character. Minor soil disturbance from cut and fill. Negligible change in bearing force of the Monument on the underlying clay layer. No impacts related to groundwater. 	IMPACTS: <ul style="list-style-type: none"> Negligible topography impacts. Negligible change in bearing force of the Monument on the underlying clay layer. No impacts related to groundwater. 	IMPACTS: <ul style="list-style-type: none"> No geophysical impacts.
Water Resources Surface Water Wetlands Floodplains	IMPACTS: <ul style="list-style-type: none"> No increase in impervious surface No disturbance of wetlands. No impact on floodplains. 	IMPACTS: <ul style="list-style-type: none"> No increase in impervious surface. No disturbance of wetlands. No impact on floodplains. 	IMPACTS: <ul style="list-style-type: none"> No water resource impacts.
Vegetation	IMPACTS: <ul style="list-style-type: none"> Minor disturbance of grasslands (sod). 	IMPACTS: <ul style="list-style-type: none"> Moderate disturbance of grasslands (sod) and major impact on trees in southeast corner and roots of perimeter trees. 	IMPACTS: <ul style="list-style-type: none"> No vegetation impacts.
Wildlife and Aquatic Life	IMPACTS: <ul style="list-style-type: none"> No impact on species. 	IMPACTS: <ul style="list-style-type: none"> No impact on species. 	IMPACTS: <ul style="list-style-type: none"> No impacts.

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Hazardous Materials	IMPACTS: <ul style="list-style-type: none">• Remediation to improve minor soil contamination.• Modification of existing building materials that may be hazardous.	IMPACTS: <ul style="list-style-type: none">• Remediation to improve minor soil contamination.• Modification of existing building materials that may be hazardous.	IMPACTS: <ul style="list-style-type: none">• Soil testing results indicate minor soil contamination.• No hazardous building materials impacts.
Air Quality	IMPACTS: <ul style="list-style-type: none">• No increase in visitor traffic; therefore, no increase in visitor traffic emissions.	IMPACTS: <ul style="list-style-type: none">• No increase in visitor traffic; therefore, no increase in visitor traffic emissions.	IMPACTS: <ul style="list-style-type: none">• No impacts.
Noise	IMPACTS: <ul style="list-style-type: none">• No increase in visitor traffic; therefore, no increase in visitor traffic noise.	IMPACTS: <ul style="list-style-type: none">• No increase in visitor traffic; therefore, no increase in visitor traffic noise.	IMPACTS: <ul style="list-style-type: none">• No impacts.

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
CULTURAL RESOURCES Archaeological Res.	IMPACTS: <ul style="list-style-type: none"> No impacts to archaeological sites. 	IMPACTS: <ul style="list-style-type: none"> No impacts to archaeological sites. 	IMPACTS: <ul style="list-style-type: none"> No impacts.
Historic Resources	IMPACTS: <ul style="list-style-type: none"> Positive historical impact of preserving the structural integrity of the Monument, replacing plaza asphalt with more appropriate materials, removal of unsympathetic external additions to Monument Lodge, removal of jersey barriers and temporary screening facility. 	IMPACTS: <ul style="list-style-type: none"> Positive historical impact of preserving the structural integrity of the Monument, replacing plaza asphalt with grass, removal of unsympathetic external additions to Monument Lodge, removal of jersey barriers and temporary screening facility. New structures at Sylvan Theatre and perimeter bollards would require sympathetic design. 	IMPACTS: <ul style="list-style-type: none"> Jersey barriers, interim screening facility, and unsympathetic additions would continue to adversely impact historic character and context.
Cultural and Ethnographic Resources	IMPACTS: <ul style="list-style-type: none"> Underground facilities would preserve cultural landscape. Seating on terraced retaining walls would enhance cultural events. Removal of parking lot would allow Friendship Garden to be completed. 	IMPACTS: <ul style="list-style-type: none"> New facilities at Sylvan Theater with double-fenced security pathway would result in major negative impacts on the cultural landscape. Removal of parking lot would allow Friendship Garden to be completed. 	IMPACTS: <ul style="list-style-type: none"> Jersey barriers and interim screening facility would continue to limit cultural activities.
Visual Resources	IMPACTS: <ul style="list-style-type: none"> Positive impact of visitor queuing out of sight. Walled terraces would have minor visual impact. Removal of jersey barriers, temporary screening facility, parking lot, and plaza asphalt would have additional positive visual impact. 	IMPACTS: <ul style="list-style-type: none"> Security pathway and perimeter bollards would produce major negative visual impacts. Removal of jersey barriers, temporary screening facility, parking lot and plaza asphalt would somewhat reduce the negative visual impact. 	IMPACTS: <ul style="list-style-type: none"> Jersey barriers and interim screening facility would continue to obstruct views to and from the Monument and visually impact the aesthetic quality and integrity of the Monument and Grounds.

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VISITOR USE AND EXPERIENCE Visitation Patterns	IMPACTS: <ul style="list-style-type: none"> No increase to capacity of Monument elevator; therefore, no increase in visitation capacity. 	IMPACTS: <ul style="list-style-type: none"> No increase to capacity of Monument elevator; therefore, no increase in visitation capacity. 	IMPACTS: <ul style="list-style-type: none"> No impacts to visitation patterns.
Visitor Experience	IMPACTS: <ul style="list-style-type: none"> Change in ticketing and access procedure would provide shelter and educational/interpretive exhibits. Underground approach would still allow above-ground experience before and/or after internal Monument tour. Visitor access would be improved due to more accessible pathways. Fewer Park Police vehicles would be parked on the Grounds. 	IMPACTS: <ul style="list-style-type: none"> Change in ticketing and access procedures would provide some shelter and educational/interpretive exhibits, but new location away from pedestrian access would not be easily identified. Double-fenced above ground approach would detract from experience and would prohibit circumnavigation of the Monument at the plaza. Fewer Park Police vehicles would be parked on the Grounds. 	IMPACTS: <ul style="list-style-type: none"> Visitor information limited to discussions with Park Rangers. Pathways not easily accessible. Jersey barriers and interim screening facility detract from experience.
Resource Interpretation	IMPACTS: <ul style="list-style-type: none"> Improved educational and interpretative exhibits would be provided in sheltered waiting areas. 	IMPACTS: <ul style="list-style-type: none"> Improved educational and interpretative exhibits would be provided in sheltered waiting areas. 	IMPACTS: <ul style="list-style-type: none"> Lack of time and physical space for educational and interpretive programs would continue.

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
SOCIOECONOMIC ENVIRONMENT Land Use	IMPACTS: <ul style="list-style-type: none"> Removal of jersey barriers and parking lot would improve general land use. Consistent with National Capital Comprehensive Plan. 	IMPACTS: <ul style="list-style-type: none"> Removal of jersey barriers and parking lot and introduction of double-fenced security pathway would not improve general land use. Somewhat consistent with National Capital Comprehensive Plan. 	IMPACTS: <ul style="list-style-type: none"> No impacts.
Recreation	IMPACTS: <ul style="list-style-type: none"> Minor impacts to casual recreation within area of Monument terraces. Improved accessibility would enhance recreation opportunities for persons with disabilities. 	IMPACTS: <ul style="list-style-type: none"> Perimeter bollards would have a negative impact on staging for recreation, special events, First Amendment activities and festivals. Secured access pathway would impede activities in southeastern area and would disrupt pedestrian /jogger circulation 	IMPACTS: <ul style="list-style-type: none"> No impacts.
Socioeconomic Resources	IMPACTS: <ul style="list-style-type: none"> No impacts. 	IMPACTS: <ul style="list-style-type: none"> No impacts. 	IMPACTS: <ul style="list-style-type: none"> No impacts.
Infrastructure	IMPACTS: <ul style="list-style-type: none"> Minor increase in use of electricity, water, and sewer for new facilities. 	IMPACTS: <ul style="list-style-type: none"> Minor increase in use of electricity, water, and sewer for new facilities. 	IMPACTS: <ul style="list-style-type: none"> No impacts.
Transportation	IMPACTS: <ul style="list-style-type: none"> Improved pedestrian access with realigned and more accessible walkways. Minor loss of 108 parking spaces. 	IMPACTS: <ul style="list-style-type: none"> Double-fenced security pathway would have a major impact on pedestrian circulation. Minor loss of 108 parking spaces. 	IMPACTS: <ul style="list-style-type: none"> No improvement to the accessibility of walkways. Jersey barriers would continue to disrupt pedestrian access.

Summary of Cumulative Impacts

Cumulative impacts are defined as the collective effects of the proposed security improvements at the Washington Monument Grounds and the ongoing and proposed projects in the vicinity of the Grounds. Upon assessment of the potential cumulative effects associated with the development of Alternative A or Alternative B at the Monument Grounds, it was determined that resources of primary concern in this analysis included geophysical resources, visual resources, and visitor experience.

The impacts on topography and soils that can be attributed to either Alternative A or Alternative B would not be amplified by other projects in the vicinity of the Grounds. The geology of the Monument Grounds would not be affected by development under Alternative A or B. Several ongoing and proposed projects have been identified in the vicinity of the Washington Monument Grounds that could potentially involve temporary dewatering; however, the security improvements at the Grounds under Alternative A or B would not require dewatering and would not contribute to cumulative effects on groundwater. Overall, there would not be cumulative impacts on geophysical resources.

The proposed improvements to the visual environment of the Monument Grounds under Alternative A would include the replacement of the temporary security measures on the Grounds with attractive landscape treatments and terraces, removal of the 16th Street parking lot, removal of the unsympathetic addition to the Monument Lodge, and the completion of the German-American Friendship Garden. These changes would contribute positively to other improvements in the landscape around the Grounds resulting in a positive cumulative impact to visual resources.

Development of Alternative B would have adverse visual impacts due to proposed features such as the perimeter bollards and the double-fenced security pathway. These adverse impacts would be somewhat reduced by the removal of the temporary security measures from the Grounds, and the removal of the 16th Street parking lot on the Grounds. Therefore, Alternative B would have

a negative visual impact on the Monument and Grounds, and a minor cumulative effect on visual resources in the vicinity of the Monument Grounds.

With the development of either Alternative A or Alternative B, existing tours and interpretive opportunities would continue to be available at museums, memorials, and other NPS sites in the vicinity of the Washington Monument. These opportunities would continue to enhance the experience of visitors to Washington DC by providing information on the historic city and the nation's most important commemorative resources. Under Alternative A, the proposed underground screening facility and landscape security improvements would also enhance the visitor experience. Potential adverse impacts for some visitors from accessing the Monument through an underground facility would be mitigated by the added benefits of new facilities, protection from the elements, added interpretive functions, and improved visual experience. Additionally, visitors would continue to have access to the entire base of the Monument via accessible walkways. Alternative A would therefore contribute to positive cumulative impacts to the visitor experience in Washington, DC.

The development of Alternative B would have a negative impact on the visitor experience at the Grounds. The relocation of ticketing, security screening, and tour queuing to new facilities at the Sylvan Theatre would provide some protection from the elements but would alter the visitor experience and conflict with other activities at the Theatre. Additionally, visitors would continue to have access to base of the Monument via accessible walkways. However, the approach to the Monument would not be protected from the elements, and the proposed double-fenced pathway would obstruct access across the southeastern portion of the Grounds, precluding circumnavigation of the Monument. Therefore, Alternative B would have a negative impact on the experience of the Monument visitors, but a negligible cumulative effect on the experience of visitors to Washington, DC.

Development of Alternative A or Alternative B would have effects that would not contribute to cumulative impacts on water resources, vegetation, hazardous materials, air quality, noise, historic resources, cultural landscapes, land use, recreation, infrastructure, and transportation of the Monumental Core.

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CHAPTER 1



PURPOSE AND NEED

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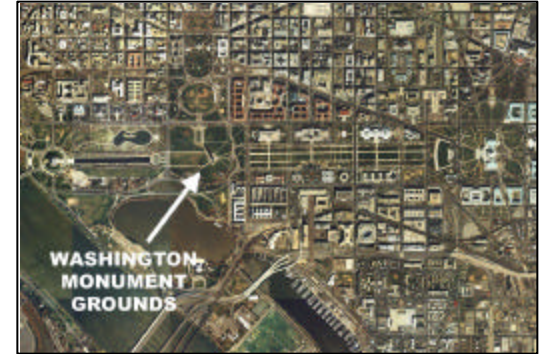
1.1 Introduction

The National Park Service (NPS) is considering a series of improvements to the current temporary security systems at the Washington Monument and its Grounds and related revisions to the 1993 Development Concept Plan. These improvements would include the construction of a permanent visitor screening facility to replace the interim visitor screening facility, and the installation of a permanent vehicle barrier system to replace the temporary concrete jersey barrier system. The program also includes general improvements to the Monument Grounds. These proposed improvements are the subject of this Environmental Assessment (EA).

The NPS has prepared this EA in compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508], the National Historic Preservation Act of 1966, as amended (NHPA), and the NPS Director's Order-12 (as reflected in the DO-12 Handbook). This EA was prepared in cooperation with the National Capital Planning Commission (NCPC). NCPC is the central planning agency for the Federal government in the National Capital Region and is responsible for reviewing the proposed action.

This EA seeks to identify two action alternatives and determine the potential impacts and recommended mitigation measures related to their implementation, as well as identify a No Action Alternative as required by CEQ. The EA addresses short-term construction-related impacts and long-term effects, as well as the cumulative impacts that would result from this and other projects that have been completed recently, are currently under development, or are proposed within the study area.

The Washington Monument and its Grounds are Federal parkland under the jurisdiction of and maintained by NPS. The Monument Grounds occupy a 106-acre area in the heart of Washington, DC's monumental core. The area is bounded by the Tidal Basin to the south, Constitution Avenue to the north, 14th Street and Raoul Wallenburg Place to the east, and 17th Street to the west. The portion of the area that is studied in this report is generally considered the historical Grounds of the Monument. This 73-acre site is bounded by Independence Avenue to the south, Constitution Avenue to the north, 14th Street to the east, and 17th Street to the west and provides a setting for the great obelisk monument to memorialize George Washington.



The Washington Monument and Grounds are located in the Monumental Core of Washington, DC.



Aerial view of the Monumental Core and the Washington Monument.



The general study area for the Washington Monument and Grounds.



The Washington Monument is a national icon with nearly one million visitors per year.

The general study area for the proposed action consists of the several blocks surrounding the Washington Monument. This study area is intended to serve as an area of emphasis within which short-term, long-term, and cumulative environmental impacts of the proposed action are analyzed. The study area may expand or contract for each resource discipline depending upon the potential for a specific impact to affect a given geographic area.

1.2 Purpose of the Proposed Action

A series of objectives were established by the NPS to guide the development of the proposed action. These objectives define the programmatic expectations for the design and construction of the security improvements. The objectives include the following:

Improvement of Security – Due to the high visibility and importance of the Washington Monument and because of increased national security concerns, the Monument requires protection against acts of vandalism, terrorism, and espionage. Required security elements include (1) a facility to screen individuals and separate them physically from people outside the secured area and (2) a vehicle barrier system located at least 200 feet from the outer corner of the Monument that can meet standards for stopping moving vehicles, while still allowing access for service and emergency vehicles.

Improvement of Visitor Flow – Ticketing functions and visitor services, including educational and interpretive areas, bookstore, visitor queuing areas, and restrooms shall be consolidated with visitor screening requirements to improve the visitor experience and enhance the delivery of essential visitor services. The vehicle barrier system must allow pedestrian as well as bicycle traffic to flow through the barrier at numerous points, and encourage users to follow established paths between the Monument and surrounding streets and access points, while not precluding walking across the Grounds.

Retention of Outdoor Activities – The Monument Grounds are a critical open space element of the monumental core. The Grounds are used for a wide variety of public activities, including First Amendment demonstrations, special events, concerts, and recreation, including softball,

jogging, and kite flying. Improvements to the Monument Grounds must retain the ability to continue these activities

Preservation of Cultural Landscape Quality – The prominence of the Monument and its setting are critical in the design and development of any landscape improvements or additional features on the site. Setbacks, topography, adjacent roadways, aesthetic quality, and viewsheds to and from the Grounds are all important considerations in the design process. Improvements to the Grounds include removal of the 16th Street parking lot and completion of the German-American Friendship Garden.

Improvement of Accessibility – Building areas and facilities shall improve accessibility for physically challenged individuals and shall be in accordance with applicable published codes and standards.

Preservation of the Monument Structure – The preservation of the Monument is to remain the highest priority of the project. Neither modifications nor attachments or appendages of any type shall be allowed to the exterior surfaces of the structure. Geotechnical issues must be addressed to ensure that the stability of the Monument is not compromised.

1.3 Need for the Proposed Action

To address immediate physical security issues at the Monument, the NPS has installed temporary barriers of various types to address vehicular threats. These temporary security barriers have ranged from a snow fence and a chainlink fence in the past, to the current system of concrete jersey barriers. To address the potential takeover of the Monument itself, an interim visitor security facility has been constructed at the eastern entrance to the Monument to electronically screen visitors who wish to gain access to the Monument. In addition, the U.S. Park Police have stationed officers at the site 24 hours a day, 7 days a week. While the physical barriers and a heavy police presence have been successful in deterring threats, the form and location of the concrete jersey barriers and the interim visitor screening facility obstruct important vistas to and from the Monument and Grounds, and disrupt pedestrian circulation patterns. In addition, the heavy personnel staffing requirements have been taxing on the U.S. Park Police.



The setting of the Washington Monument is an important cultural landscape.



The existing temporary vehicle barrier system consists of concrete "jersey" barriers.



Visitors seeking access into the Washington Monument must wait outdoors prior to their reserved tour time.

The pathways and facilities on the Monument Grounds also require updating. Walks and paths to the base of the Monument need to be made more accessible for persons with physical disabilities. The German-American Friendship Garden is an important cultural resource that has not been completed. It was established in 1983 to symbolize friendship between the peoples of Germany and the United States and to commemorate 300 years of German immigration and contribution to America. Concession facilities on the site are inappropriately situated. Restroom facilities are inadequate. Conditions currently do not allow the provision of educational and interpretive programs and visitor services to meet NPS standards. Finally, visitors to the Monument, while waiting to obtain tickets or to ascend the Monument, are completely exposed to the weather.

CHAPTER 2



BACKGROUND

APRIL 2002

2.1 Historical Background

The Washington Monument, as the nation's foremost memorial to George Washington, is one of the most recognizable structures in the United States. It is also a premier example of Egyptian Revival architecture and a notable accomplishment of 19th-century engineering. The Washington Monument was one of the first historic properties to be listed on the National Register of Historic Places in 1966 and has also been listed on the DC Inventory of Historic Sites.

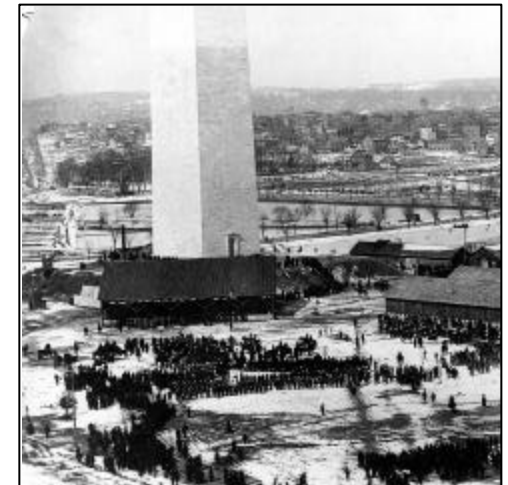
Plans for a national monument to Washington began in 1783. However, initial discussions were for a figural sculpture of the president. In 1833, the newly formed Washington National Monument Society announced its intention to erect a monument "whose dimensions and magnificence shall be commensurate with the greatness and gratitude of the nation which gave [George Washington] birth [and] whose splendor will be without parallel in the world." The Society initiated an architectural design competition in 1836, which prominent architect Robert Mills won with a plan to "harmoniously lend durability, simplicity, and grandeur." As Assistant Architect of the Capitol, his landscape designs for the Mall featured the Washington Monument as the focus of picturesque gardens and winding formal pathways.

Construction began in 1848, but stagnated due to monetary issues and then the onset of the Civil War. Construction resumed in 1878 under the direction of Lt. Colonel Thomas L. Casey of the U.S. Army Corps of Engineers. Casey altered Mills' original design and proposed an unadorned Egyptian obelisk with a pointed pyramidion. A 3,300-pound capstone was placed at the top and was crowned with a 9-inch-tall aluminum pyramid. The Monument was dedicated in 1885 by President Chester A. Arthur and opened to the public in 1888, 40 years after the initial cornerstone was laid.

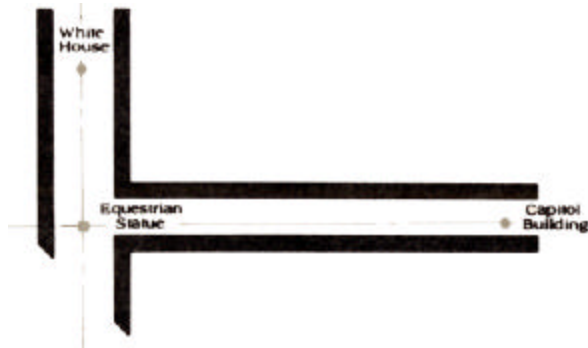
The Washington Monument Grounds have served and continue to serve as a vital public space in the Nation's Capital for celebrations, demonstrations, and recreation. The Grounds have experienced nearly continual change over the last 200 years, from the filling of marshland as part of the McMillan Plan to livestock grazing to Civil War encampments to temporary World War II structures to the introduction of the Sylvan Theatre.



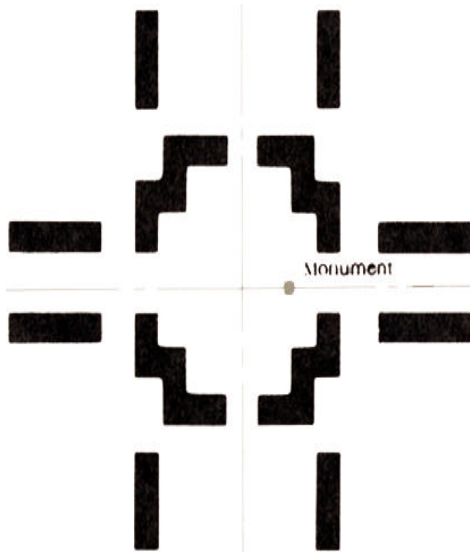
Construction of the Monument began in the 1840s and resumed in the 1880s.



American troops at the dedication of the Monument in 1885.



Basic form of the 1791 L'Enfant Plan for Washington, DC.



Basic form of the 1901 McMillan Plan for the National Mall.

2.2 Background to the Planning Process

Historical Plans

L'Enfant's Plan for Washington, DC in 1791 is the sole American example of a comprehensive Baroque city plan and has defined the physical and symbolic character of the nation's capital city through its arrangement of buildings, structures, and views. The plan dictated that a monument to Washington should be built where the east-west axis from the Capitol along the National Mall to the western horizon intersects with the north-south axis from the House to the southern horizon. When construction began in 1848, however, the designated site was unstable marshland and the Monument was consequently erected slightly southeast of the intersection.

The Senate Park Commission of 1901, known as the McMillan Commission, expanded the L'Enfant Plan to create the most elegant example of City Beautiful tenets in the nation. The McMillan Plan intended to reconcile the relocated Washington Monument with the L'Enfant plan geometry and its original siting for the Monument, as well as reserve the Monument Grounds for public enjoyment. The McMillan Commission proposed that the Monument be flanked by formal, sunken gardens to the north and south; to the west, the design proposed a 300-foot-wide marble staircase that descended 40 feet from the platform to an oval pool and another formal sunken garden. The Monument's reflection in the oval pool would create the illusion that the Monument had been realigned with the north-south axis from the White House. While the design would have fulfilled the desired geometric integrity of L'Enfant's Plan, concerns at the time over structural issues and cost complaints led the commission to abandon the proposed design.

Guidelines for the National Mall were prepared in 1932 by Fredrick Law Olmstead Jr., Fredrick A. Delano, and other commissioners based on interpretations of the L'Enfant and McMillan Plans. This vision included an "open vista" between the Capitol and the Washington Monument and became a part of the 1933 Department of the Interior plan.

Recent Plans

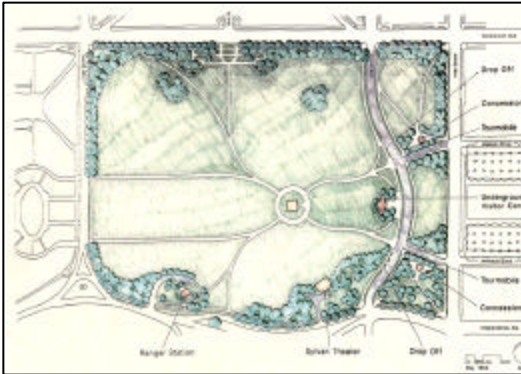
Regardless of design nuances, the various iterations of design concepts for the Washington Monument and Grounds over the last 30 years have maintained the spirit of the L'Enfant Plan by maintaining the primary structures and monuments “as dominant elements in the landscape” and fitting the plans to the site’s topography. The plans accommodate modern needs within the “goals of preserving and enhancing important vistas, ensuring harmony and continuity with adjacent monumental areas, and enhancing the quality of the visitor experience.” The proposed action is the culmination of a more than 30-year planning effort.

A 1966 plan for the National Mall sought to maintain the integrity of the principal east-west axis of the L'Enfant Plan through formalized settings. The plan was revised in 1973, substituting more modest proposals in the hope of seeing them realized before the Bicentennial in 1976. Another 1973 plan proposed an underground visitor services structure that ringed the Monument and connected to a below-grade elevator landing. Some of the proposals on the Mall were instituted, but funds ran out before those affecting the Grounds could be implemented. In 1974, the NPS prepared an interim plan for the Monument Grounds to temporarily improve conditions during the Bicentennial. None of the 1974 proposals was implemented, but they were reflected in the preparation of subsequent plans.

In 1981, the Development Concept Plan (DCP) recognized that “design continuity is lacking, graceless and unsymmetrical features diminish visual quality, and modern structures and facilities intrude on vistas and detract from the site’s integrity” and incorporated the best of the previous plans so that the Grounds would be compatible with other parts of the Mall (NPS 1981). In 1982, the 1981 DCP was modified and approved to add landscape improvements and above-ground buildings. In 1986, a plan for an above-ground visitor’s center located in the Monument’s viewshed was rejected by the Federal review agencies. In 1989, the approved DCP was further modified to recommend four principal proposals: (1) visitor services should shift from the Monument base to the Sylvan Theatre area, (2) the Monument Plaza would have a grassy area for passive use, (3) 15th Street would be realigned, and (4) the Monument Lodge would be restored to its original appearance.



Thumbnail representation of the 1981 proposed concept plan for the Washington Monument Grounds.



Thumbnail representation of the 1993 plan for the Monument Grounds.



Portrait of General George Washington.

In 1993 a new plan was prepared that proposed restoration of the Monument Lodge as the entrance to a new underground visitor facility and walkway modifications to meet universal accessibility. Various elements have been realized, such as the realignment of 15th Street (and Madison and Jefferson Drives), improvement of pedestrian connections on the east side to adjacent parcels, and the relocation of the tourmobile stops outside of the primary National Mall viewshed. Other elements were not implemented, such as restoration and adaptation of the Monument Lodge as a portal to the visitor facility, various walkway modifications, improvements to the plaza at the Monument's base, and removal of the 16th Street parking lot. Beginning in 1998, a series of temporary security measures were implemented. These included the installation of temporary concrete jersey barriers around the Monument in 1998, and the construction of an interim visitor screening facility at the eastern entrance to the Monument in 2001.

2.3 Significance of the Washington Monument

The Washington Monument is significant as the United States' foremost memorial to its first president, George Washington. Referred to as a man who was "first in war, first in peace, and first in the hearts of his countrymen," Washington guided the United States through its first crucial years as a young country.

The Washington Monument is more than a tribute to the nation's first president. It is also a powerful yet elegant symbol of the ideals of Washington and of democracy. Further, it is a tribute to Washington, DC. In Charles Dickens' words, the "City of Magnificent Intentions" radiates from the National Mall and the Washington Monument Grounds, with the Monument and Grounds forming the political and cultural core of the city.

The Monument and Grounds derive further significance from their design. The gently rolling landscape of the Grounds stands in contrast with the formal French treatment of the Mall and the Reflecting Pool. Further, the Monument's form as an Egyptian obelisk with a pointed pyramidion led it to be one of the first historic properties to be listed on the National Register of Historic Places in 1966. Reasons cited in the Register for its listing included being the world's largest freestanding stone structure, a major example of Egyptian Revival architecture, and a notable accomplishment of 19th century engineering.

2.4 Issues and Impact Topics

CEQ regulations and DO-12 indicate that Federal agencies are responsible for a clear and efficient definition of project issues. Following a thorough review of the previous documentation, completion of the public scoping process, and based on the identification of relevant issues, a determination was made as to which impact topics warranted selection for analysis. Within those selected disciplines, a few topics were determined to be of particular importance for the proposed action, and thus were identified for a more comprehensive analysis. Table 2.4-1 indicates the treatment of each of the resource disciplines within this EA.

Three general resource topics were determined through the scoping process to be key issues that warranted a comprehensive analysis. These key issues include Geophysical Resources, because of concerns about the possible subsidence of the Monument; Visual/Scenic Resources, because of the aesthetic sensitivity of the National Mall and the Monument Grounds; and Visitor Experience, because of the popularity and interest in the Monument as a national resource. The analyses for these key resource issues consider the prescriptive guidance outlined in NPS DO-12.

A number of additional resource topics were selected for analysis in this EA based on the potential for impacts from the proposed action. These include Water Resources, Vegetation, Air Quality, Noise, Historic Resources, Land Use/Recreation, Infrastructure, and Transportation.

Prime and Unique Farmlands, Wildlife and Aquatic Life, and Threatened and Endangered Species were determined not to be present within the study area and were thus dismissed from detailed analysis. Further, it was determined that Ethnographic Resources and several Socio-Economic areas, including Population and Economy, Housing, and Community Services, are not relevant to the proposed action. As a result, these topics have also been dismissed from detailed analysis.

**Table 2.4-1
Treatment of Resource Disciplines**

RESOURCE	STATUS
Natural Resources:	
Geophysical (soils, geology groundwater)	Key Issue
Prime and Unique Farmlands	Dismissed
Water Resources	Selected
Vegetation	Selected
Wildlife and Aquatic Life	Dismissed
Threatened and Endangered Species	Dismissed
Hazardous Materials	Selected
Air Quality	Selected
Noise	Selected
Cultural Resources:	
Historic Resources	Selected
Archaeological Resources	Dismissed
Ethnographic Resources	Dismissed
Cultural Landscapes	Selected
Visual/Scenic Resources	Key Issue
Visitor Use and Experience	
Visitation Patterns	Selected
Visitor Experience	Key Issue
Resource Interpretation	Selected
Socioeconomic Environment:	
Land Use	Selected
Recreation	Selected
Socio-Economic Resources	Dismissed
Population and Economy	Dismissed
Housing	Dismissed
Community Services	Dismissed

2.5 Cumulative Relationship to Other Planning Projects

Several ongoing and planned projects within the vicinity of the Washington Monument and Grounds could generate cumulative impacts when considered together with the impacts of the proposed action. These projects are as follows:

1. World War II Memorial – The World War II Memorial currently under construction across 17th Street from the Monument Grounds involves the temporary pumping of groundwater during construction of a slurry wall and thus will be considered in the analysis of groundwater resources.
2. Ronald Reagan Building – Ongoing dewatering from the underground garage will be included in the analysis of potential effects on the water table.
3. Red Cross Building – Construction adjacent to the National Capital Red Cross Building at 2000 E Street, N.W. involves temporary dewatering and thus will be addressed in the analysis of cumulative impacts to groundwater.
4. Proposed Parking Lot under the Ellipse – The potential construction of a parking facility under the Ellipse could also involve dewatering during construction and thus could have a temporary impact on groundwater.
5. Martin Luther King, Jr., Memorial – Development of the King Memorial on the Tidal Basin at Independence Avenue will be considered in addressing visitation and circulation patterns.
6. NPS Transportation Study – Recommendations contained within this study could generate new concepts relating to transportation and parking.
7. NCPC Report “Designing for Security in the Nation’s Capital” – NCPC is evaluating security issues in the District of Columbia in response to increased threats.

The potential cumulative impacts of these projects, together with the proposed security improvements at the Washington Monument and Grounds, are considered in Chapters 5, 6, and 7 of this EA, for Alternatives A, B, and C, respectively.



Location of potential cumulative impact projects.

CHAPTER 3



PROPOSED ACTION AND ALTERNATIVES

APRIL 2002

3.1 Alternatives Considered

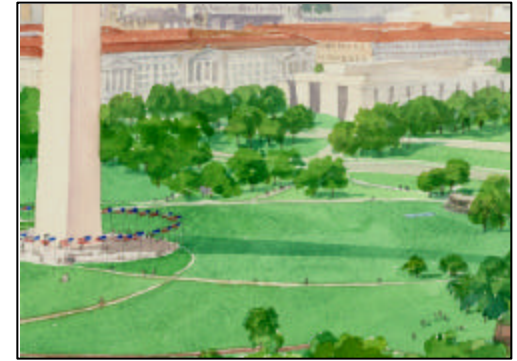
This EA analyzes the alternative development programs and plans to provide security improvements for visitor screening, and to install vehicle barriers around the Monument. Consistent with the proposed action, this EA addresses the environmental consequences of two build alternatives, as well as the impacts associated with maintaining the status quo, as follows:

- Alternative A (Below-Grade Alternative)
- Alternative B (Above-Grade Alternative)
- Alternative C (No Action Alternative)

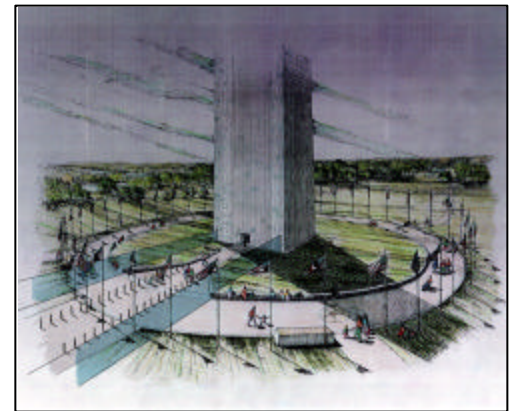
A series of functional goals and objectives were established at the onset of the planning process, as enumerated in the November 2001 *Program Requirements for the Washington Monument Permanent Security Improvements* distributed by the NPS. The two build alternatives propose to fulfill the goals and objectives through the following three types of physical improvements:

- Visitor screening facility
- Vehicle barrier system
- Grounds improvements

Other alternatives were initially considered for analysis in this EA but were eliminated from further assessment. It was determined that these alternatives do not satisfy the program requirements for security improvements while also fulfilling the functional goals and objectives for Monument and the Mall. These eliminated alternatives are included in Section 3.5 of this EA, “Alternatives Considered But Eliminated.”



Perspective drawing of Alternative A.



Perspective drawing of Alternative B.

3.2 Alternative A (Below-Grade Alternative)



Illustrative plan of Alternative A –
Below-Grade Alternative.

Alternative A includes the establishment of an underground visitor screening facility and a landscape vehicle barrier system. The visitor screening would be conducted in a below-grade facility that would be located between the east side of the Monument and the Monument Lodge. The vehicle barrier system would be provided by a system of bermed terraces and pathways. A diagrammatic plan of Alternative A is presented in Figure 3.2-2.

Visitor Screening

Visitor screening would be provided in a underground facility and passageway traversing approximately 230 feet from the Monument Lodge to a point adjacent to the elevator shaft of the Monument. This new facility would replace the existing above-ground visitor queuing area around the perimeter of the Monument plaza, the existing visitor screening facility located in a temporary building on the plaza immediately adjacent to the eastern side of the Monument, and the existing ticket distribution kiosk on the west side of 15th Street at Madison Drive.

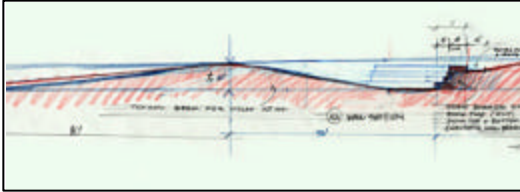
The Monument Lodge would be rehabilitated and adaptively used as the portal to a new underground visitor screening facility. The visitor facility would consist of approximately 16,000 square feet of space and include a ticketing/lobby area, and a security queuing and screening area with x-ray and magnetometer equipment. The facility would also include an educational and interpretive area, support space, restrooms, and a bookstore.

From the visitor screening facility, an underground passageway would continue toward the Monument in a gentle upward slope (less than 5 percent grade). The passageway would then penetrate the exterior below-grade wall of the Monument above the foundation and connect to the Monument's elevator core, which would be lowered one floor. The passageway would be architecturally enhanced with lighting and surface treatment of the walls and floors. A skylight would be installed flush to the ground with an east-west orientation to allow light into the screening facility and preserve the visual connection to the Monument.

Figure 3.2-1
Alternative A Visitor Screening Facility



Vehicle Barrier System

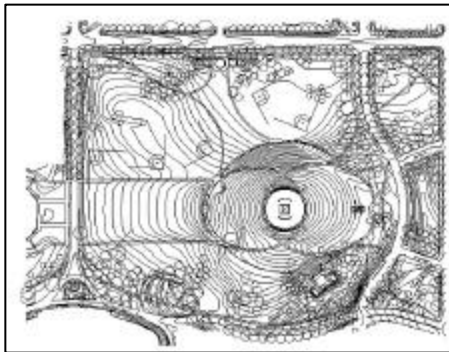


Landscaped vehicle barrier system with terraces and walls.

Under Alternative A, a graded system of walled terraces and pathways would be constructed around the Monument to provide a barrier system that would meet the prescribed standards for stopping moving vehicles. This system would replace the existing double ring of above-ground concrete jersey vehicle barriers located in a 200-foot radius from the Monument.

The terraces and pathways would form graceful, overlapping rings around the Monument at a radius of approximately 400 feet. The proposed terrace walls would be between 24 inches and 30 inches tall. The main paths would ramp up at a less than 5 percent grade to the Monument. Retractable security posts between 36 and 38 inches tall would be placed at pathway junctions. Berms, set back approximately 50 feet from the walls, would be used to screen the walls from the west. The existing grade at the Monument's grassy mound would be regraded to achieve a more uniform topography.

Grounds Improvements



Site plan for Alternative A.

Alternative A also includes a variety of improvements to the Washington Monument Grounds. The current asphalt paving of the plaza would be replaced with upgraded pavers and materials consistent with the tone of the Monument. Also included in the proposed design, which is sympathetic to the 1888 plaza, would be stone benches placed in a circular pattern around the outer perimeter of the plaza for seating. Walkways on the Grounds would be reconfigured to allow for easy pedestrian flow and to comply with the accessibility standards.

Under Alternative A, the 16th Street parking lot on the northern portion of the Grounds would be removed. The removal of the parking lot would allow the German-American Friendship Garden to be completed and would also allow the walkways northwest of the Monument to be configured in a more graceful manner.

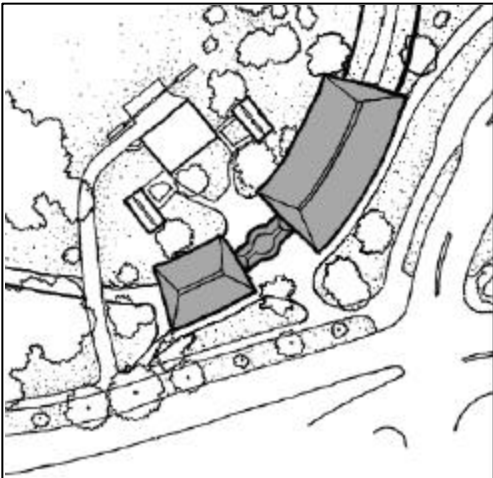
Figure 3.2-1
Alternative A Site Diagram



3.3 Alternative B (Above-Grade Alternative)



Illustrative plan of Alternative B – Above-Grade Alternative.



Site plan of the Alternative B visitor screening facility.

Alternative B includes above-grade security measures. Under Alternative B, the Monument visitor screening system would be located above-ground on the Monument Grounds away from the primary views and vistas, and the vehicle barrier system would consist of safety bollards located along the perimeter of the Grounds. Bollards are short, vertical posts used in landscaping to accentuate special features or provide direction and control of pathways. A diagrammatic plan of Alternative B is presented in Figure 3.3-1.

Visitor Screening

As part of Alternative B, a new above-ground visitor screening facility would be constructed in the southeastern corner of the Grounds at the Sylvan Theatre complex. This new facility would replace the existing above-ground visitor queuing area around the perimeter of the Monument plaza, the existing visitor screening facility located in a temporary building on the plaza immediately adjacent to the eastern side of the Monument, and the existing ticket distribution kiosk on the west side of 15th Street at Madison Drive.

The new screening facility would consist of 16,000 square feet in two buildings located in a less-visible and less-used part of the Grounds and clustered within an area of existing trees to minimize visibility and preserve sight lines. The eastern building would accommodate security procedures and an educational and interpretive area. The western building would accommodate visitor amenities, such as ticketing and restrooms. Since many of the visitor services functions would be accommodated in the new buildings, the Monument Lodge would be restored to its historic exterior appearance and be used for visitor restrooms and administrative purposes.

After visitors are screened with x-ray and magnetometer equipment at the new facility, they would be physically separated from the general public. Visitors and tour groups would wait for their reserved times. A secure pathway would be necessary to lead groups of visitors from the screening facility to the Monument entrance. The 8-foot wide pathway would be contained within a double row of fences. The inner fence would consist of 3-foot high bollards, linked by chains, located 2 feet from the edge of the pathway. The outer fence would consist of an 8-foot high glass-like wall located 12 feet from the edge of the path to create a secure corridor between

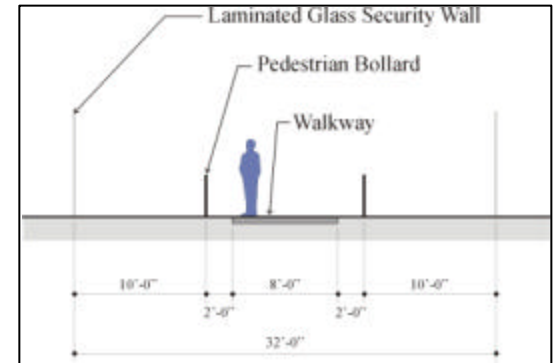
the inner and outer fences approximately 10 feet in width. The overall width of the double-fenced pathway would be 32 feet.

The double-fenced corridor would begin at the exit of the screening facility, bisect the Monument plaza and terminate at, but not attach to, the eastern face of the Monument. Law enforcement personnel would escort the visitor groups from the screening facility to the Monument. A double-locked door would be installed at the entrance to the Monument.

The outer fence must be configured to preclude the opportunity for unscreened items being passed through to visitors who have already been screened. While an 8-foot high fence would prevent joggers or other athletic and casual users from easily jumping over them, it is possible that the corridor might have to be fully enclosed to prevent items from being thrown over the fence.

Vehicle Barrier System

Under Alternative B, a ring of bollards would be placed around the perimeter of the Monument Grounds to provide a barrier system that would meet the prescribed standards for stopping moving vehicles. These densely placed bollards would replace the existing double ring of concrete jersey barriers located in a 200-foot radius from the Monument. Approximately 1,600 bollards would be placed in a linear fashion around the 1.25-mile perimeter of the Grounds, measuring 4 feet from the center of one bollard to the center of the next. The bollards would likely be simple, unadorned metal cylinders painted a neutral color. The bollards would be 42 inches in height and 14 inches in diameter, with a cap designed to discourage use as a seat. Moveable bollards and gateway barriers would be located at key pathway intersections to provide access for maintenance and emergency vehicles.

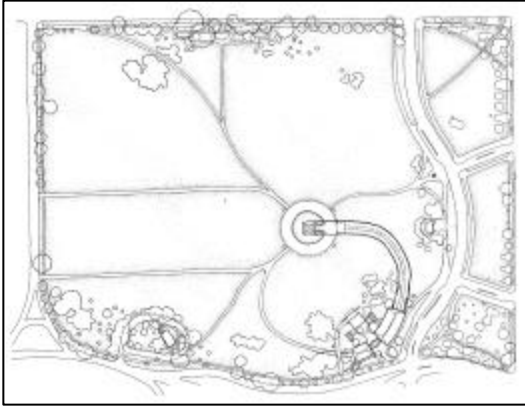


Section of 32-foot wide double-fenced security corridor.



Vehicle barrier systems consisting of security bollards are used to protect Federal facilities in Washington, DC.

Grounds Improvements



Site plan for Alternative B.

Alternative B includes a variety of improvements to the Washington Monument Grounds. With the shift of emphasis away from the Monument as the visitor screening and tour queuing area, the current asphalt paving of the plaza would be replaced with an interior grassy area and an outer hardscape ring. This grassy surface would help emphasize the simplicity of the white obelisk rising directly from the grassy mound. The grassy area would be edged with granite and surrounded by a low granite wall, which would be intended as a directional device to encourage circulation around the Monument and would serve as informal seating. The outer hardscape ring would consist of upgraded materials.

The walkways would be reconfigured to allow for easy pedestrian flow through the Grounds and to comply with accessibility standards. Alternative B also includes a non-secure pathway connection from the Monument to the Sylvan Theatre.

Under Alternative B, the 16th Street parking lot at would be removed. The removal of the parking lot would allow the German-American Friendship Garden to be completed and would allow the walkways to the north of the Monument to be configured in a more graceful manner.

Figure 3.3-1
Alternative B Site Diagram



3.4 Alternative C (No Action Alternative)



Existing temporary visitor screening facility.

As part of the environmental analysis process, the consequences of a No Action Alternative are also considered. Under the No Action Alternative, all existing structures and elements of the Washington Monument Grounds would remain in their existing use and condition. There would be no new development or reconfiguration of facilities. The No Action Alternative does not involve a return to a previous condition, but involves the continued use of existing temporary measures for Monument security, visitor screening and access, and vehicle barriers.

Visitor Screening

The existing visitor security system, which consist of NPS and U.S. Park Police personnel identifying, grouping, and isolating ticketed visitors in the plaza around the Monument, would continue under the No Action Alternative. At designated times, groups would be led to the interim screening facility to undergo security screening with x-ray and magnetometer equipment. This function would continue to occur in the temporary structure located adjacent to the base of the Monument. Following the screening, the group would proceed directly into the Monument under Alternative C.

Vehicle Barrier System

Under the No Action Alternative, the existing temporary concrete jersey barrier system would remain and be a visible part of the character of the Monument Grounds and the National Mall. Since suitable replacement of the temporary concrete jersey barriers is an initiative of the Bush Administration associated with homeland security, implementation of the No Action Alternative would necessitate further efforts to find a suitable replacement for the concrete jersey barriers.

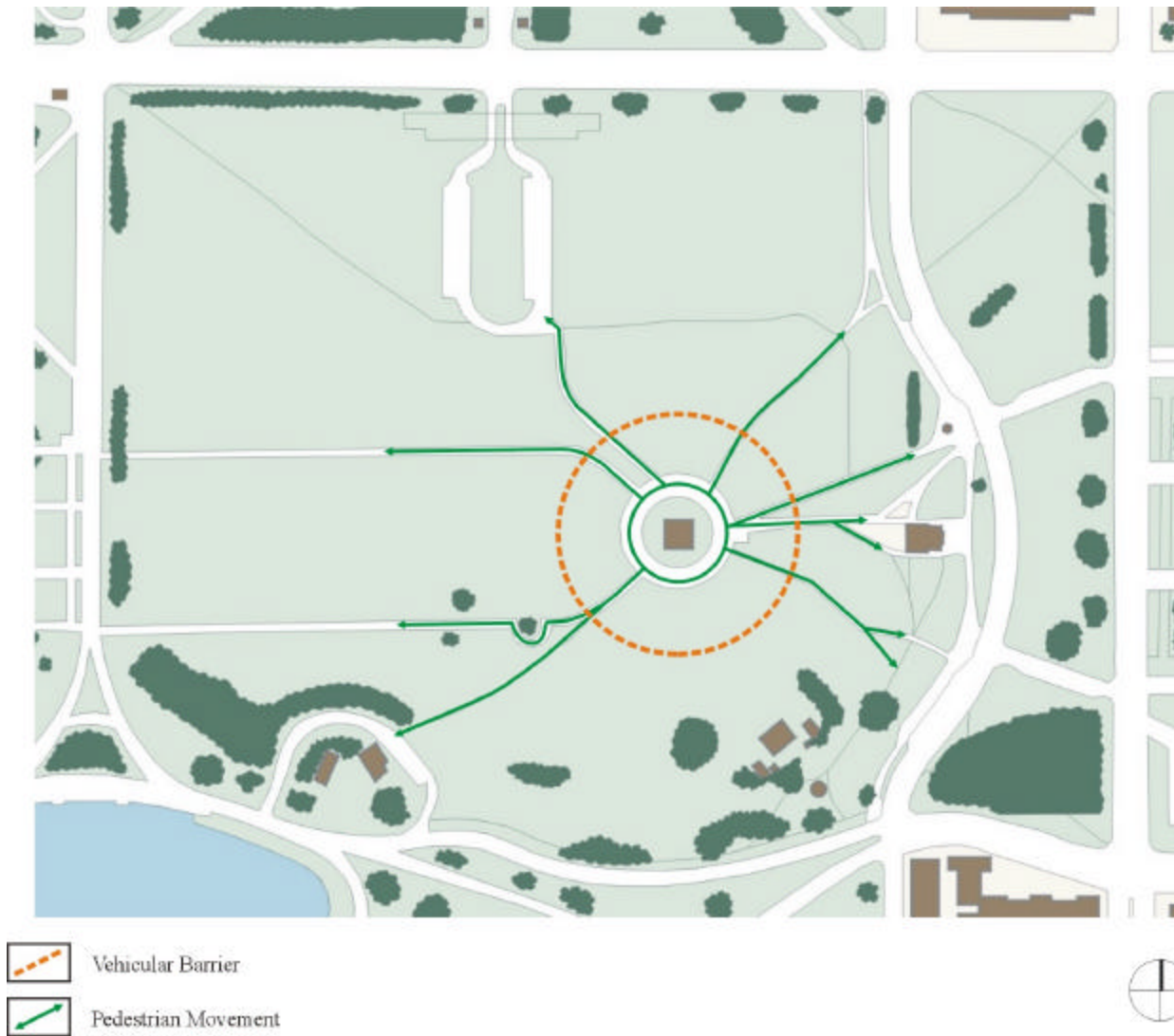
Grounds Improvements

The existing paths to the base of the Monument need to be made more accessible. Under the No Action Alternative, these paths would remain unimproved in their current locations. The 16th Street parking lot on the northern portion of the Grounds would remain and the German-American Friendship Garden would not be completed.



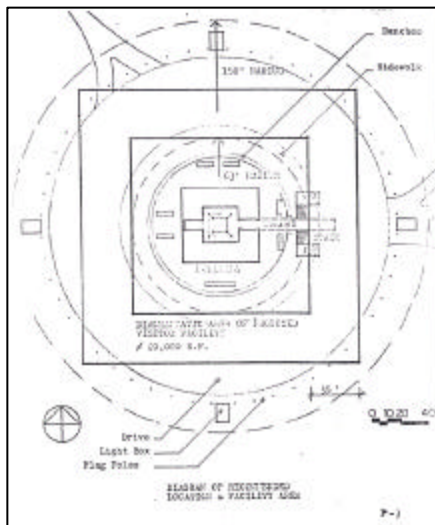
Existing temporary vehicle barrier system.

Figure 3.4-1
Alternative C Site Diagram



3.5 Alternatives Considered But Eliminated

As part of the current process to improve security at the Washington Monument, a number of alternatives were considered. Many of the ideas and concepts for these alternatives originated during planning efforts for the Monument Grounds over the past 30 years. The planning history for the Monument Grounds, including the underground visitor center shown to the right, is presented in Section 2.1. More recent planning efforts since 1998 have focused on addressing security concerns related to visitor access/screening, and vehicular barriers.



Previous plan for underground visitor center.

Access/Screening

An underground visitor center was first proposed in 1973 as a one-story underground building for visitor services and educational and interpretive space running completely around the Monument foundation. It was intended to connect with the Monument through a underground passageway to a new level below the elevator shaft.

Placing the screening facility on the ground level of the Monument itself was considered. However, this concept was rejected because it did not meet U.S. Park Police requirements that no weapons or explosives enter the Monument, and there was insufficient space to install a magnetometer and x-ray machine.

A below-grade/above-grade hybrid alternative to connecting an underground passageway directly to the Monument elevator was considered. In the hybrid alternative, the underground passageway would ramp up to the ground surface outside of the Monument plaza. Visitors would then access the Monument via a double-fenced pathway. The secured pathway portion of this alternative is similar to the longer pathway described under Alternative B. This option would require use of a double-locked door system at the Monument entrance/exit.

An alternative to an above-ground double-fenced pathway for pedestrians is a tram vehicle system. Under this option, passengers would be carried from the screening facility to the Monument via a secured, above-ground tram. This option would generate substantial pedestrian/tram conflicts unless a dedicated pathway was established. As a result, the tram option would be similar to the above-ground pathway component of Alternative B.

An above-grade visitor screening facility located at the Monument Lodge was rejected by review agencies. The facility would have been a new structure introduced into the primary viewshed.

Vehicular Barriers

An alternative vehicle barrier system that placed bollards around the perimeter of an expanded Monument plaza in the location of the existing jersey barriers was proposed in 2001. This concept was rejected by review agencies due to the inappropriate relationship of the bollards and the natural setting of the Grounds (bollards are typically located in urban settings along walkways and streets). In addition, the proposal presented difficulty in locating a screening facility and in maintaining separation of screened visitors and unscreened visitors.

3.6 Environmentally Preferred Alternative

CEQ's regulations implementing NEPA require a Federal agency to identify the alternative or alternatives that are considered to be environmentally preferable. In this case, the No Action Alternative appears to involve the fewest changes to the natural resource environment. However, this alternative would not allow for the necessary security improvements. In addition, the concrete jersey barriers would continue to obstruct important vistas and pedestrian movement to and from the Monument and Grounds. The incompatible addition to the Monument Lodge would continue to detract from the historic integrity of the Grounds, existing pathways would not be improved, and the 16th Street parking lot would continue to prevent completion of the German-American Friendship Garden. Finally, the heavy personnel staffing of the Monument and Grounds would continue to tax the U.S. Park Police. Therefore, the No Action Alternative is not the environmentally preferred alternative and the implementation of one of the two action alternatives is necessary to satisfy the purpose and need for the proposed action.

Of the two action alternatives, Alternative A would have the fewest adverse impacts and the greatest number of positive impacts. Under Alternative A, barriers and structures that detract from visual quality would be removed, pathways would be consolidated, and the compacted soil would be improved. Therefore, Alternative A, the Below-Grade Alternative, would be the environmentally preferred alternative.



There are several stands of trees on the Monument Grounds.

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CHAPTER 4



AFFECTED ENVIRONMENT

APRIL 2002

4.1 NATURAL RESOURCES

4.1.1 Geophysical Resources

The Washington Monument Grounds include approximately 73 acres of rolling terrain. The Grounds include a gently sloping mound that rises about 25 to 30 vertical feet from the perimeter of the Grounds to the base of the Monument at slopes between approximately 3 percent and 7 percent grade. The topsoil immediately surrounding the Monument is an artificially created mound composed entirely of introduced Udorthents association fill material (USGS 1965), consisting of medium red-brown fine sandy clay with some gravel and cinders present (Hartman-Cox). Accordingly, there is no potential for prime or unique farmland on the Monument Grounds.

The portion of Washington, DC that contains the Monument Grounds lies within a geologic province known as the coastal plain, where sedimentary soils overlie crystalline bedrock sloping gradually to the south or southeast. In the southern part of the District of Columbia, Cretaceous marine deposits such as stiff plastic clays or very compact clayey sands overlie the bedrock, and Pleistocene stream terrace deposits often overlie the Cretaceous material in the downtown area. Under the Monument, however, an unusual profile is present where shallow bedrock and the erosion of Cretaceous soils by Pleistocene streams led to Pleistocene terrace deposits lying directly upon bedrock.

Beneath the Washington Monument, Pleistocene materials comprise a range from medium plastic slightly to moderately organic clays to very compact mixtures of sand and gravel with some boulders, extending upward from bedrock to the fill materials that compose the topsoil of the Grounds. From core borings, the substrate of the Monument Grounds has been found to include (progressing from the ground surface down): fill 15 to 25 feet thick, sand and clay 10 to 15 feet thick, sand and gravel 20 to 40 feet thick, sand 0 to 40 feet thick, clay 2 to 40 feet thick, and bedrock. Groundwater is present in the subsoil profile of the Monument at a level that varies with the tide of the Potomac River and with the seasons (Hartman-Cox). In 1930, the groundwater table was documented at about Elev. 0 MSL feet referenced to Mean Sea Level (MSL), while in 1973 the water table was recorded at around Elev. -10.5 feet MSL (Hartman-Cox).



Existing topography at Monument Grounds.

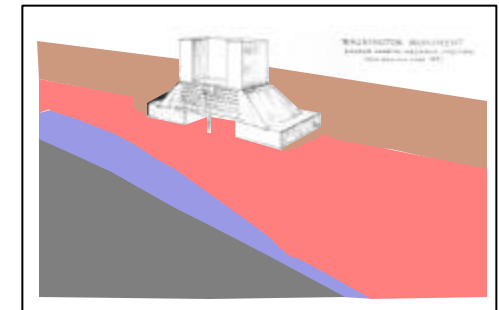


Diagram of Washington Monument substrata.

Background

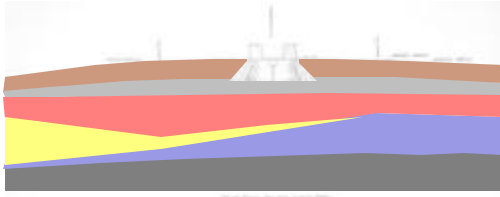


Diagram of Monument substrata depths.



The original Monument foundation prior to underpinning.

The 1791 L'Enfant Plan for the National Mall called for an equestrian statue of Washington to be placed at the intersection of the east-west axis of the Mall from the U.S. Capitol to the Potomac River and the perpendicular north-south axis to the White House. However, this site was found to be too marshy to support the statue and, in 1848, Congress passed a resolution identifying a site 125 feet to the south and 375 feet to the east as the location for an obelisk monument (Mueser Rutledge). Initial construction of the Washington Monument lasted from 1848 until 1854, when all development halted for 24 years. When construction stopped, the Monument stood at a height of 156 feet and weighed 31,152 tons, including the foundation.

By 1878 the incomplete obelisk had settled out of plumb and leaned 1.75 inches to the north (President) and a project was initiated to underpin the Monument and address the differential settlement conditions. An 1877 Senate report indicates that engineers believed the project of excavating below the existing Monument foundation to place the underpinning would be very hazardous since the bottom of the proposed underpinning would be only 2 feet above the high tide level of the Potomac River and 6 inches below the groundwater level. Despite these concerns, the underpinning of the Monument was completed in 1879, having involved the excavation of over 70 percent of the original 6,400-square-foot foundation area and the correction of the vertical tilt of the Monument (Hartman-Cox). The underpinning consisted of concrete footings 13.5 feet thick that extended 18 feet under the original foundation, with buttresses added above the footings and around the original foundation. The new composite foundation extended 37 feet below the ground and covered a total bearing area of 16,000 square feet (Hartman-Cox). A Senate report in 1880 indicated that during the underpinning process, an average settlement of about 2 inches had occurred at the Monument's corners. The same report stated that, since the underpinning had been completed, 17,000 tons of load had been placed upon it causing subsidence of 0.5 inches on the southwest corner of the Monument, 0.47 inches on the southeast corner, 0.52 inches on the northeast corner, and 0.53 inches on the northwest corner (President).

By 1884, construction of the Monument had been completed. The finished structure and surrounding fill created an aggregate weight of 81,120 tons of force upon the soil beneath the Monument. Since the completion of the underpinning, 34,604 tons had been added to the obelisk structure yielding subsidence of 2.02 inches on the southwest corner of the Monument, 2.02 inches

on the southeast corner, 2.03 inches on the northeast corner, and 2.08 inches on the northwest corner (President). By 1886, 20 feet of additional fill were added around the base of the Monument and resulted in an additional 0.75 inches of total settlement (Hartman-Cox).

Due to the pronounced initial settlement of the Monument, and the continuing gradual progressive settlement, improvements to the Grounds have been the subject of study, with particular focus on the structural capacity of the Monument substrate. The McMillan Plan of 1901 proposed an extensive masonry treatment for the Grounds, but would have required the removal of a large soil load from the northwest to southwest quadrant and an extensive loading of soil east of Monument to bring the eastern Grounds to the height of the mall. Given the settlement that had been recorded over the existence of the Monument and the large extent of soil disturbance proposed in the plan, implementation of the McMillan Plan was stalled pending analysis (President).

1930 Study

In 1923, the Coastal and Geodetic Survey began taking measurements of the Washington Monument and found that 0.75 inches of settlement had occurred since 1886, at an average rate of 0.02 inches per year. By 1930, the total settlement since commencement of the underpinning construction in 1879 had reached about 5.5 inches. Given the continuing slow settlement of the Monument, Congress organized an advisory committee of architectural and engineering experts to investigate the construction feasibility of the McMillan Plan. The advisory group made an initial observation of the Monument site and immediately concluded that no adequate design work could be completed for the Grounds until more complete understanding was acquired of the substrate of the Monument. Accordingly, seven core borings to bedrock were taken around the perimeter of the driveway at the base of Monument (President).

From the 1930 soil borings, the foundation of the Washington Monument was found to rest upon a dense bed of sand and gravel underlain by a 20- to 40-foot layer of stiff plastic wet blue clay. Bedrock was encountered at about 80 feet below the foundation of the Monument. The groundwater level was identified at Elev. 0.0 MSL and was described to vary 0.28 feet periodically with the tide of the Potomac River and up to 8 feet seasonally (President).

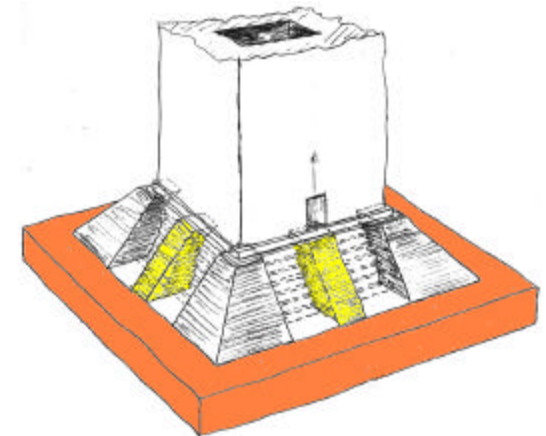
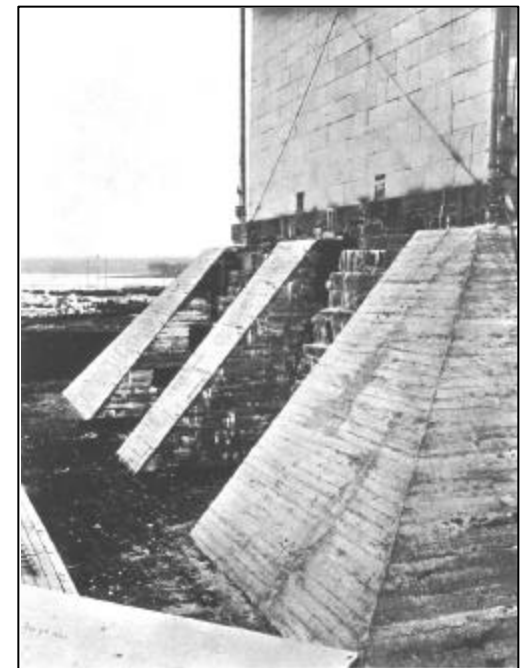


Diagram of Monument underpinning plan.



Buttresses were used to reinforce the Monument's underpinning.

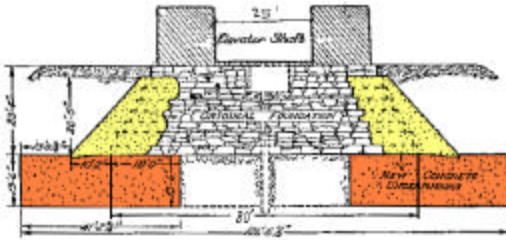


Diagram of the Monument's underpinning detail.



Buttress construction in 1879.

Given the discovery of the thick layer of wet clay beneath the Monument, the advisory committee conservatively concluded, through basic soil weight calculations, that the proposed movement and unbalance of soil loads associated with the 1901 plan would “seriously endanger” the Monument. It was determined that the plan could only be implemented if the Monument was underpinned to bedrock. However, upon review of the high cost and risks considered inherent in this option, the advisory committee recommended that further consideration of the 1901 plan should be abandoned. The architects of the committee then devised new “Formal” and “Informal” plans for treatment of the Washington Monument Grounds (President).

In 1931, a second set of core borings were taken at greater distances from the base of the Monument, to allow feasibility analyses of the Formal and Informal plans. In the half circle clockwise from northwest to southeast of the Monument, the substrate was found to include a 30- to 40-foot bed of soft clay composed of compressed river mud. In the half circle clockwise from the southeast to the northwest, the clay was not as thick and in some areas had been eroded by ancient streams and replaced with sands or gravel. The characteristics of the clay indicated that, without the possibility of flow due to excessive pressures, the material made an adequate foundation to support the Monument. However, it was concluded that by removing a substantial amount of surface soil around the Monument and thereby decreasing the resisting capacity of overlying layers, or by adding extensive soil loads and increasing pressures on underlying soils, the clay layer could be squeezed and hazardous unstable conditions at the Monument site could result (President).

Under these assumptions, the advisory engineers recommended that both the Formal and Informal plans would be hazardous and that future plans for the Monument Grounds should be revised to include less shifting of soil loads. It was further stated that up to 40,000 cubic yards of fill might be safe on the panel between 14th and 15th Streets, if the material was carefully placed to avoid localization of increased pressure. From the Monument westward, it was believed that the minimum of change should be pursued, involving only the careful smoothing of contours. In 1932, NCPC stated that, “as no thoroughly satisfactory plan to safeguard the stability and aesthetic possibilities at the Washington Monument” had yet been found, NCPC favored delay of improvements on the Monument Grounds as necessary for further study of the project (President).

1962 Study

In 1962, a new structural study of the Monument substrate was initiated and a set of nine core borings were taken, four at the corners of the Monument and five extending the range of the previous borings. Given the compressive strength qualities of the clay and other materials in the boring samples, as tested in a laboratory, several conclusions were drawn. Since 1886, 1.4 inches of slow progressive settlement of the Monument had occurred at an almost uniform rate. The characteristics of the borings indicated that this was likely due to compaction in the sand and gravel substrate from vibrations or movements from wind loading. Considering this likelihood, and given lab measurements of the potential compaction or creep of the underlying clay, the following recommendations were made to guide plans for the Monument Grounds, representing less conservative guidance than that from the 1930 study. Within 250 feet of the Monument, it was recommended that no change be implemented. Beyond 250 feet from the Monument, fill could be added to Elev. 25 MSL. From 250 to 350 feet from the Monument, cuts should be maintained at a 3:1 slope. Beyond 350 feet from the Monument, cuts could be made to Elev. 5 MSL. Finally, movements and vibrations should be minimized and observed while pile driving, since records exist of settlement hundreds of feet from pile driving that caused sand compaction (Barber 1962).

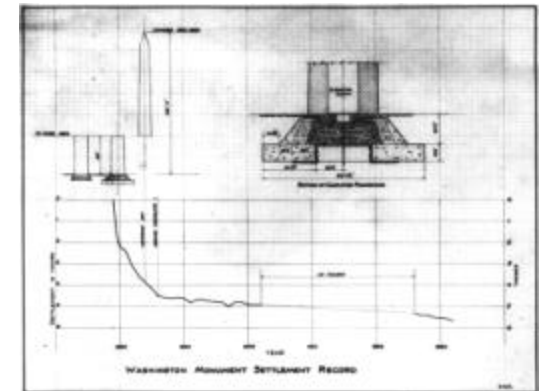


Underpinned Monument foundation.

1973 Study

In 1966, an improvement plan was prepared for the entire National Mall including the Washington Monument Grounds. In 1973, the plan was revised and an engineering report was prepared evaluating the new proposal for the Washington Monument Grounds. The plan incorporated an extensive underground facility designed to serve a capacity of 600 visitors every 45 to 60 minutes, including an underground corridor providing elevator access under the Monument (Hartman-Cox).

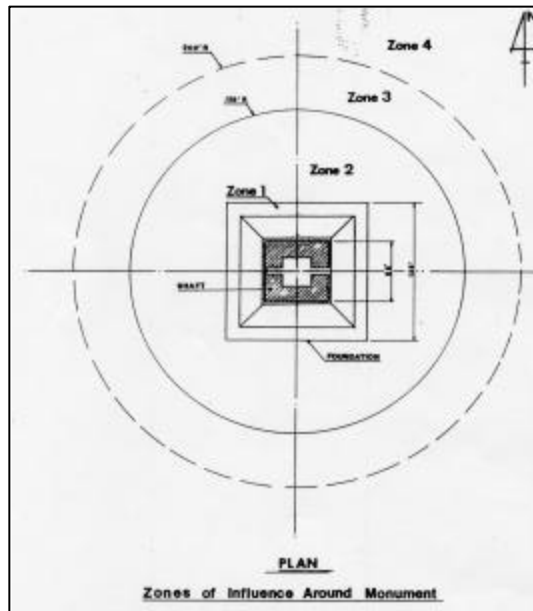
The 1973 study reported that more than 4.5 inches of total settlement had occurred relatively quickly between completion of the Monument underpinning in 1879 and completion of the Monument in 1886, which indicated the Monument substrate had not been completely preconsolidated and that it underwent rapid initial compression under the increased loads of the completed obelisk and additional fill material. The study further found that, from 1886 to 1972, approximately 1.5 inches of slower progressive Monument settlement had occurred resulting in



Early Monument settlement record.

about 6 inches of total settlement over the existence of the Monument since the completion of the underpinning (Hartman-Cox).

To investigate the continuing progressive settlement of the Monument, and the consequent feasibility of the 1973 plan, a new series of three core borings were taken on the Monument Grounds. The strata identified in the borings included, in order of descending elevation: fill, silty sands and clays, compact sand and gravel, stiff plastic clay, and decomposed rock descending to bedrock. The groundwater level under the Monument had been lowered over time by drawdown due to development along the National Mall and the water table was encountered in the borings at around Elev. -10.5 MSL. It was suggested that the Monument could potentially have experienced accelerated settlement from 1962 to 1973 due to this lowering of the groundwater table; however, no measurements were available to verify this possibility and there were no visible signs of distress to the Monument. Based on new laboratory measurements of the characteristics of the boring samples, more relaxed recommendations than those from the 1962 study were made regarding engineering actions within radial zones of potential influence on the Monument Grounds (Hartman-Cox).



Zones of influence surrounding Monument.

Regarding soil loads, the 1973 study recommended that the net change in load within 63 feet of the Monument center (overlying the Monument foundation) should not exceed 500 pounds per square foot, although this requirement was relaxed for small dimension passageways or corridors. The recommended limit for an increase in loading within 150 feet of the Monument center was 1,000 pounds per square foot, while the recommended limit for reduction of loading in the same area was 1,500 pounds per square foot asymmetrically or 2,000 pounds per square foot symmetrically. It was further stated that beyond 150 feet from the Monument center, net loading changes should have little effect, but that the addition of 1,500 pounds per square foot or reduction of 2,000 pounds per square foot loading, over a lateral dimension of more than 150 feet asymmetrically or 200 feet symmetrically should be kept beyond 200 feet from the Monument center. Finally, the recommended limits of structural bearing on soils on or below the foundation of the Monument were as follows: 1 ton per square foot in the top fill layer, 1.5 tons per square foot in the sandy clay layer, 2 tons per square foot in the silty sand layer, 3 tons per square foot in the compact sand and gravel layer, and 2 tons per square foot in the plastic clay layer. No structural bearing was recommended below Elev. 0 MSL because of potential groundwater effects (Hartman-Cox).

Regarding excavation, the 1973 study recommended that no cuts below Elev. 16 MSL should be made within 115 feet of the Monument center, and that the width of excavations in that area should not exceed 45 feet. Beyond 150 feet from the Monument center, excavations to Elev. 0 MSL were considered acceptable given that the width of cuts was not over 100 feet. Between 115 feet and 150 feet from the Monument center, the recommended maximum excavation depth was a theoretical line sloping downward at 2.6:1 from Elev. 16 MSL. Finally, it was recommended that the excavation for a widespread structure should be carried out with great caution, and should balance load removal on opposite sides of the Monument at all times, and that the walls of excavations should be sloped wherever possible or retained by cofferdams on soldier piles in pre-augured holes where necessary (Hartman-Cox).

1984 Study

In 1981, NPS created a new DCP for the Washington Monument and its Grounds. The plan proposed extending the row of elms from the National Mall to the panel between 14th and 15th Streets, leveling the area between the new elms by terracing the north/south slope to the east of the Monument, removing the Monument Lodge, removing asphalt walks and replacing with new regraded walkways, installing planting beds and trees in a berm around the base of the Monument, and realigning the 15th Street corridor and constructing a tourmobile rest stop on the street (NPS 1981).

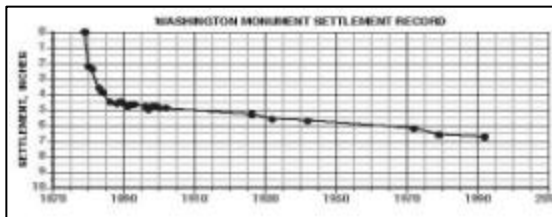
In 1984, a Washington Monument Settlement Analysis study was prepared to evaluate the potential effects of the 1981 plan to add fill and regrade on the west side of the Monument for the installation of new walkways to 17th Street, the parking lot, and the Survey Lodge. The study reported that the maximum thickness of the proposed fill would be approximately 7 feet deep at a location 320 feet to the northwest of the Monument center. The estimated increase in pressure below the center of the Monument, at the middle of the clay layer, was 10 pounds per square foot, which was less than one-tenth of 1 percent of the existing pressure (Mueser Rutledge 1984).

Based on the predicted substrate pressure changes, the report stated the expected settlement of the Monument to be 0.015 inches at the southeast corner of the Monument and 0.06 inches at the northwest corner of the Monument, yielding maximum differential settlement of 0.045 inches and deflection at the top of the Monument of one-third of an inch. Additionally, the report asserted that

the slow rate of continuing settlement of the Monument was completely explainable in terms of normal physical compression of underlying soils. Therefore, in the least conservative engineering finding to date, the study concluded that implementation of the proposed grading would not likely cause Monument displacement of engineering significance. It was further recommended that before earthwork commenced, the Coast and Geodetic Survey go through a cycle of measurements on the Monument and repeat the measurements after construction so that the effects of the project could be observed and noted (Mueser Rutledge 1984).

Current Studies of Soils and Groundwater

In 1989, the 1981 DCP for the Washington Monument was revised and in 1993 the plan was further refined and approved by CFA, DC SHPO, and NCPC. The plan did not include an evaluation of structural effects on the Monument; however, a detailed record of cumulative Monument settlement through 1995 was compiled toward evaluating the general engineering feasibility of the 1993 plan for the Grounds.



Updated Monument settlement record

Additionally, soil borings have recently been taken for engineering analysis of the current proposed action for the Grounds. In the borings, the groundwater table under the Washington Monument Grounds has been documented at about Elev. -5.7 feet MSL. The Potomac River is in proximity to the Grounds, with a water surface level at approximately sea level (Elev. 0.0 MSL), creating potential for abundant groundwater recharge from the Potomac at the Monument Grounds. Accordingly, while the water table will naturally fluctuate over time, engineers have predicted that the average ground water level at the Grounds will equalize at an elevation a few feet below sea level, potentially rising to approximately sea level during severe storm events (Hartman-Cox).

The greatest depth of construction associated with the current proposed action for the Monument Grounds is Elev. 3.5 MSL. This would be substantially above the existing groundwater level of Elev. -5.7 MSL and several feet above the potential high groundwater level that engineers have predicted. Therefore, the proposed action would not require dewatering. Additionally, at the predicted groundwater elevations, the water table would be at least 13 feet above the highest elevation of the wet plastic clay substrate on the Grounds at Elev. -19 MSL. Thus, changes in the water table due to projects or factors outside the scope of the proposed action would not likely

dewater the clay layer. Given these conditions, the current proposed action would be essentially unrelated to and unaffected by potential slight changes in the water table.

4.1.2 Water Resources

Surface Water

Washington, DC lies in the Potomac River drainage basin, a subbasin of the Chesapeake Bay watershed. All surface waters in the District of Columbia flow to the Potomac River either directly or through tributaries of the Potomac such as Rock Creek or the Anacostia River. At the Washington Monument, approximately 61.8 acres (85 percent) of the Grounds are covered in pervious surfaces, about 10.9 acres (15 percent) are covered in impervious surfaces, and no permanent water bodies are present. Stormwater that falls on the Grounds either infiltrates permeable vegetated ground during overland flow or enters closed drainage systems and storm sewers. On the west side of the Monument, two field drains convey stormwater into a drainage system where the stormwater is filtered through an oil/grit separator before release into the Tidal Basin. North of the Monument, field drains along sidewalks lead into a combination storm and sanitary sewer that flows into a combined sewer at Constitution Avenue. To the east and south of the Monument, field drains located near the Monument Lodge and along sidewalks lead into combined storm and sanitary sewer lines that flow into a combined sewer at 15th Street.

The combined sewer trunk lines lead to the Blue Plains Treatment Facility where, under normal conditions, waters are cleaned before release to the Potomac. The Blue Plains facility operates in compliance with the permitting criteria of the National Pollutant Discharge Elimination System (NPDES). However, under severe storm conditions, the combined storm and sanitary flow may overflow the unified sewer lines, entering a piped system that bypasses the treatment facility and discharges directly to the Potomac. The District of Columbia has studied this issue and is preparing a plan to address the replacement of combined sewers with separate storm and sanitary sewer lines.



View from the top of Washington Monument to the Tidal Basin.

Wetlands

The National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service produces information on the characteristics, extent, and status of the nation's wetlands. According to the NWI, the Washington Monument Grounds do not include wetlands.

Floodplains

According to the Federal Emergency Management Agency, a portion of the southeastern Washington Monument Grounds lies within the 100-year floodplain of the Potomac River. However, since the landscaped Grounds consists entirely of introduced fill, the area does not contribute to the productivity of the floodplain ecosystem (NPS 1995).

Past studies of flood potential at the Monument Grounds have indicated that the area along 17th Street is particularly prone to flooding. The U.S. Army Corps of Engineers has proposed emergency plans to reduce the northward spread of flooding waters near the Monument by creating an earth levee with sandbags across 17th Street. A berm on the northwest portion of the Monument Grounds functions as earth storage for the levee (NPS 1995).

4.1.3 Vegetation

The Washington Monument Grounds have been developed and landscaped, distinctly altering the environment from its natural conditions. Site improvements including the addition of fill, establishment of prominent open areas and crowd assembly areas, and general maintenance practices have created an entirely introduced vegetative environment (NPS 1981).

The Monument Grounds consist of a park-like grassy area and slightly over 5.5 acres of planted tree area. Elms (*Ulmus* spp.) line the Grounds along Constitution Avenue, 17th Street and 14th Street (with a corresponding break in the line at the primary east-west vista of the Mall), while Japanese cherries (*Prunus serrulata*) are dominant on the northern portion of the Grounds. On the southern portion of the Grounds, planted woody vegetation includes mostly American elm (*Ulmus americana*), American linden (*Tilia americana*), red oak (*Quercus rubra*), Eastern white pine (*Pinus strobus*), American holly (*Ilex opaca*), sugar maple (*Acer saccharum*), and Japanese cherry.



Trees scattered across the Monument Grounds.

Other woody species present include ginkgo (*Ginkgo biloba*), white ash (*Fraxinus americana*), pin oak (*Quercus palustris*), willow oak (*Quercus phellos*), white oak (*Quercus alba*), catalpa (*Catalpa bignonioides*), mountain maple (*Acer spicatum*), Norway maple (*Acer platanoides*), and white fir (*Abies concolor*) (NPS 1981). One very large and unique mulberry tree (*Morus alba*) is located on the Grounds to the southwest of the Monument.

There are no known critical habitats or endangered or threatened plant species on the Monument Grounds (Gray). Additionally, there are no designated conservation areas or natural areas on the Grounds.

Poor soil conditions and disease have led to the premature death of a number of elm and Japanese cherry trees on the Monument Grounds (NPS 1981). American elms in the vicinity of the Mall, like those throughout a majority of the eastern United States, have suffered from the spread of Dutch elm disease. The annual loss of American elms at the Mall was reported to be about 1 percent in 1993. Lost American elms around the Mall have been replaced by NPS with elm species that demonstrate more resistance to Dutch elm disease (Smithsonian).

4.1.4 Wildlife and Aquatic Life

The entire Washington Monument Grounds have been disturbed and landscaped, and previous marshlands and man-made pools on the Grounds have been permanently filled. Therefore, the Monument Grounds do not comprise natural environments for terrestrial or aquatic animal species (NPS 1981). No critical habitat is present, and no known endangered or threatened animal species currently inhabit or utilize the Grounds (Gray). The wildlife community on the Grounds likely includes common urban species such as small mammals and birds including gray squirrels (*Sciurus carolinensis*), Norway rats (*Rattus norvegicus*), pigeons (*Columba livia*), house sparrows (*Passer domesticus*), and starlings (*Sturnus vulgaris*).

4.1.5 Hazardous Materials



Soil borings at the Monument Grounds

The Monument mound is composed of fill material from the 1800s. Since the proposed action would disturb these sediments, preliminary environmental soil investigations were conducted at six locations within the proposed area of disturbance to assess the potential for contamination.

During the environmental soil tests, borings were made to the depth of disturbance in areas affected by the proposed site improvements. Soils were screened in the field for contaminants and one sample from each boring was laboratory-tested for contamination. Since the proposed construction and operation of Alternative A at the Monument Grounds would not include residential features, contamination levels in the soil samples were compared to the EPA's risk-based standards for contaminant levels in both non-residential and residential areas.

Analysis of the soil samples revealed levels above the EPA non-residential standards for one contaminant at three boring locations. Within the near-surface soils at these three locations, arsenic levels were slightly above the EPA non-residential standard of 3.8 mg/kg. Relative to the EPA residential standards, two contaminants were detected at elevated levels, including arsenic and benzopyrene (a volatile organic compound). Arsenic was measured at about 1 to 4 mg/kg at near-surface depths in six boring locations, which is above the EPA residential risk-based level of 0.43 mg/kg. Benzopyrene was measured at one location at 0.594 mg/kg, which is above the EPA residential standard of .087 mg/kg.

The existing structures on the Grounds were built during periods when hazardous materials such as lead-based paint were used. Since the proposed action may involve altering these structures in some manner, hazardous materials have the potential to be released. Human exposure to these contaminants may present a health hazard. Therefore, best management practices for working with hazardous materials would be required.

4.1.6 Air Quality

Air Quality Standards

In response to the Clean Air Act of 1970 and the Clean Air Act Amendments of 1977 and 1990, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the protection of human health and welfare. Current NAAQS are set for carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), particulate matter equal to or less than 10 microns in size (PM₁₀), and fine particulate matter (PM_{2.5}). The EPA assesses the status of compliance with the NAAQS for geographic regions specified throughout the United States. Regions that meet the NAAQS are called “attainment areas,” while regions that do not meet the NAAQS are called “nonattainment areas.” Areas that have been reclassified from nonattainment to attainment status are called “maintenance” areas.

Air Quality Conditions

The proposed action would be located within the National Capital Interstate Air Quality Control Region (NCIAQCR). This region includes Washington, DC; Montgomery, Prince George’s, Calvert, Charles, and Frederick counties in Maryland; Arlington, Fairfax, Loudoun, Stafford, and Prince William counties in Virginia; and the City of Alexandria in Virginia. While the region has been designated by the EPA as a “serious non attainment area”, it meets the NAAQS for all other air pollutants. Air pollutant concentrations are measured at monitoring stations throughout the NCIAQCR to evaluate the air quality of the area and to determine compliance with the NAAQS. Ambient air monitoring is conducted in accordance with EPA-approved methodologies, standard operating procedures, and quality assurance procedures. In order to achieve attainment with the NAAQS, the region submitted a State Implementation Plan (SIP) with yearly updates the details air pollution Control measures such as stationary and non-highway source controls, vehicle inspection and maintenance programs, and transportation control.

General Conformity

The Clean Air Act Amendments of 1990 require the USEPA to promulgate rules to ensure that Federal actions conform to the appropriate SIP. These rules are known together as the General Conformity Rule (40 C.F.R. §§ 51.850-860 and 40 C.F.R. §§ 93.150-160). The General

Conformity Rule requires any Federal agency responsible for an action in a nonattainment area to determine that the action is either exempt from the General Conformity Rule requirements or that the action conforms to the applicable SIP. The conformity assessment process is intended to ensure that Federal agency actions: (1) will not cause or contribute to new violations of National Ambient Air Quality Standards (NAAQS); (2) will not increase the frequency or severity of any existing violations of ambient air quality standards; and (3) will not delay the timely attainment of ambient air quality standards. There are approximately 30 presumptive exemptions established and available in the General Conformity Rule. In addition, an agency may establish that the projected emission rates would be less than specified emission rate thresholds, known as *de minimis* thresholds, and that the emissions would be less than ten percent of the area emission budget. If these conditions are met, then the requirement to demonstrate conformity is not applicable, i.e., conformity of the project is presumed.

Air Pollution Sources

In the greater metropolitan Washington, D.C. region, automobile traffic is a significant contributor to air quality problems. Automobiles are principal sources of CO, as well as the source of hydrocarbons and nitrogen oxides, which react in the atmosphere in the presence of sunlight to form O₃ and other photochemical oxidants, the components of “smog.” It is difficult to associate O₃ levels with a particular traffic-producing project, because ozone is not emitted directly, but is produced over time, and is dependent on weather conditions. O₃ levels are highest in the summer under stagnant air conditions. CO, conversely, is emitted directly and concentrates locally around heavily traveled roadways and congested intersections. CO levels can be more directly attributed to local traffic levels. CO levels tend to be highest in the winter when cold weather causes automobiles to burn gas less efficiently.

4.1.7 Noise Levels

Terminology

Noise is generally defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. Most environmental noise includes a conglomeration of frequencies from distant sources, which create a relatively steady background noise in which no particular source is identifiable. Human hearing is less sensitive at low frequencies and extremely high frequencies than at mid-range frequencies. Therefore, a method called “A-weighting” is used to filter noise frequencies that are not audible to the human ear.

Noise levels are usually measured and expressed in decibels (dB). All sound levels discussed in this section are A-weighted and therefore are called the A-weighted sound level (dBA). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3 dBA decrease. Typical noise levels for common outdoor and indoor activities are shown in Table 4.1.7-1.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of frequencies from distant sources, which create a relatively steady background noise in which no particular source is identifiable. Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq} , or the equivalent noise level for that period of time. The period of time average may be specified; $L_{eq}(3)$ would be a three hour average; when no period is specified, a one hour average is assumed. Construction noise standards are typically stated as average noise levels over a period of 1, 8, or 12 hours.

Noise standards for land use compatibility are established by various agencies and jurisdictions. A person may not cause or permit noise levels that exceed noise standards. Construction and demolition, pile driving, and blasting during daylight hours are activities that are exemptions to these prohibitions.

Through its Noise Control Regulations (Municipal Regulation Title 20, Chapters 30 and 31), the District of Columbia has established maximum permissible sound levels for any sound that emanates from an operation, activity, or noise source at the property line of the site on which the noise source is located. Construction noise levels are addressed in Title 20, Chapter 30, Section 3004.2 of the D.C. Municipal Regulations which states that “individual pieces of construction equipment shall be exempt at all time. They shall operate so as to comply with the noise limits established in 3102 of this title.” Section 3102 requires that from 7:00 a.m. to 7:00 p.m. on any weekday, construction and demolition noise levels (excluding pile drivers) shall not exceed 80 dB(A) Leq unless granted a variance. From 7:00 p.m. to 7:00 a.m., maximum noise levels of 55, 60, and 65 dB(A) apply for residential, commercial, and industrial, respectively, with no averaging time period specified. For construction noise, measurements shall be made 25 feet from the outermost limits of the construction site. No permit for construction or demolition shall be issued until the permit applicant provides written documentation that construction noise will comply with District noise regulations.

Noise Sensitive Receptors

Noise sensitive receptors are generally considered to be human activities or land uses that may be subject to the stress of significant interference from noise. Land uses associated with sensitive receptors include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries. Sensitive receptors may also include threatened or endangered noise sensitive biological species.

There are no noise sensitive receptors currently on the project site. The off-site noise sensitive receptors of concern in the project region are the inhabited buildings in the vicinity of the construction and the roadways that would carry the greatest volumes of construction-related vehicle traffic.

Table 4.1.7-1 Typical Noise Levels

Common Outdoor Activities	Noise Level dBA	Common Indoor Activities
Jet Fly-over at 1,000 feet (300 meters)	--110--	Rock Band
Gas Lawn Mower at 3 feet (1 meter)	--100--	
Diesel Truck at 50 feet (15 meters), at 50 mph (80 km/hr)	--90--	Food Blender at 3 feet (1 m) Garbage Disposal at 3 feet (1 meter)
Noisy Urban Area, Daytime	--80--	
Gas Lawn Mower, 100 feet (30 meters)	--70--	Vacuum Cleaner at 10 feet (3 meters)
Commercial Area	--60--	Normal Speech at 3 feet (1 meter)
Heavy Traffic at 300 feet (90 meters)	--50--	Large Business Office Dishwasher Next Room
Quiet Urban Daytime	--40--	Theater, Large Conference Room (Background)
Quiet Urban Nighttime	--30--	Library
Quiet Suburban Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
Quiet Rural Nighttime	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
<i>Source: Caltrans 1998.</i>		

4.2 CULTURAL RESOURCES



The setting for the Washington Monument includes its Grounds, the National Mall, West Potomac Park, and the Ellipse.

This section details the archaeological, historic, and cultural resources present on the Washington Monument Grounds and the study area. The information was derived by examining various historical documents, including the National Register of Historic Places nomination form for the Washington Monument, the Historic American Building Survey (DC-349) for the Washington Monument, and additional historical narratives from books and internet sites. For the purposes of this section, the Area of Potential Effects (APE) is defined as the boundaries of the Washington Monument Grounds, as well as West Potomac Park, the Ellipse, the National Mall, and the L'Enfant Plan.

4.2.1 Archaeological Resources

Prior to the construction of the Monument Grounds, the marshy nature of the topography would have restricted most prehistoric occupation to higher ground. Prehistoric use of the area by semisedentary agriculturalists is unlikely since the soils are hard silty clays lensed with silty sand and are not conducive to slash-and-burn subsistence cultivation. Prehistoric use would most likely have focused on exploitation of waterfowl and marshy plants, which are activities that would have resulted in short-term hunting/gathering sites.

With the construction of the Monument, evidence of prehistoric occupation on the high ground would likely have been destroyed by excavations for the Monument's foundation or buried under well-vegetated fills. Given that the proposed excavations will not go below the historic circa 1878 grade, the potential for encountering archaeological resources listed on the National Register is extremely low.

However, there may be archaeological sites below the project area or outside of the project area bounds. There are references to the Washington Monument Grounds as a prehistoric site from the late archaic period (2000-1000 BC). The general area yielded 147 artifacts, including flakes, chips, a half-grooved axe, and projectile points.

4.2.2 Historical Resources

There are several historic resources located within the APE for the Washington Monument. The resources listed in the National Register, which include buildings, land areas, and physical plans, are identified in Table 4.2.2-1. The most relevant of these resources are described on the following pages.

**Table 4.2.2-1
Designated Historic Resources**

Resource	National Register Designation
Washington Monument	1966
National Mall	1966, 1974, and updated in 1981
Ellipse	Part of 1978 Presidents Park and 1997 L'Enfant Plan designation
West Potomac Park	2001
L'Enfant Plan	1966 and 1997
McMillan Plan	1997 as part of L'Enfant Plan designation

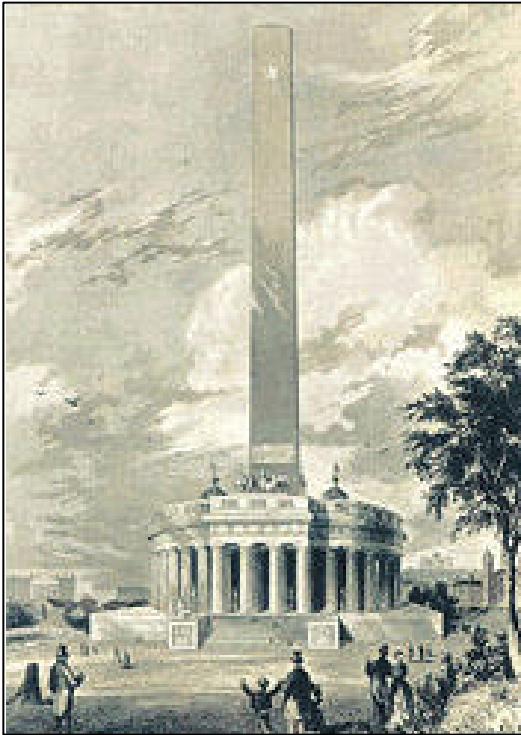


View from the top of the Monument east to the U.S. Capitol.

The Washington Monument

The Washington Monument, as the nation's foremost memorial to President George Washington, is one of the most recognizable historic resources in Washington, DC and the United States. It is also the world's largest freestanding stone structure, a major example of Egyptian Revival architecture and a notable accomplishment of 19th-century engineering. The Washington Monument was one of the first historic properties to be listed on the National Register of Historic Places in 1966.

Plans for a national monument to Washington began in 1783, when Major Pierre Charles L'Enfant proposed and the Continental Congress resolved that, "an equestrian statue of General Washington be erected at the place where the residence of Congress shall be established." Although the U.S. Congress authorized this proposal, no action was taken. After Washington's death in 1799, Representative John Marshall proposed that a sculpture to Washington be erected within the Capitol building. However, construction was delayed because of lack of funds and the reluctance of



Robert Mills' neoclassical design of the Washington Monument.

Washington's heirs to move his body from Mount Vernon. Memorialization intensified with the centennial of Washington's birth in 1832, when Congress appropriated \$5,000 for a marble statue to be placed in the Capitol Rotunda. A controversial 20-ton, seated, semi-nude, classical figure of Washington was unveiled in 1841 but it did not fulfill the public's desire for a fitting tribute. Eventually the statue was moved to the Smithsonian in 1908.

In 1833, former Librarian of Congress George Watterson formed the Washington National Monument Society to renew interest in the project. The Society, which was later led by John Marshall and James Madison, raised over \$28,000 and announced its intention to erect a monument "whose dimensions and magnificence shall be commensurate with the greatness and gratitude of the nation which gave [George Washington] birth [and] whose splendor will be without parallel in the world." The Society initiated an architectural design competition in 1836, which prominent architect Robert Mills won with a plan to "harmoniously lend durability, simplicity, and grandeur." As Assistant Architect of the Capitol, his landscape designs for the Mall feature the Washington Monument as the focus of picturesque gardens and winding pathways.

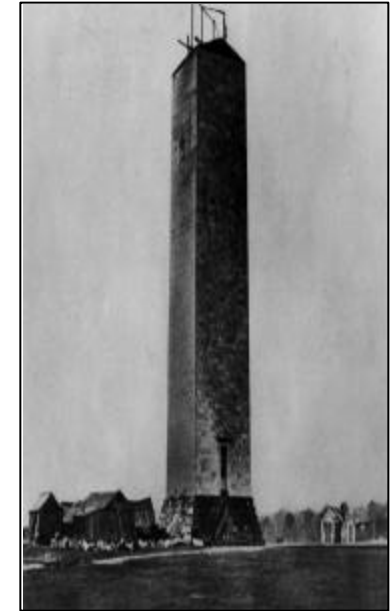
Mill's neoclassical design proposed a 600-foot tapering, nearly flat-topped obelisk, with a single star near the apex to represent Washington's immortality. A circular colonnade pantheon, 250 feet in diameter and 100 feet high, would surround the obelisk at its base. The design proposed that a classically inspired statue of Washington driving a chariot would stand on the colonnade and 30 statues of Revolutionary War heroes would be displayed in the niches between the columns. Other features included friezes with state seals and frescoes and paintings of battle scenes. The base of the colonnade would also include a museum and archives. Mills hoped that George Washington and other heroes would be entombed in subterranean catacombs. The Society never formally accepted the elaborate designs for the base of the Monument, but instead concentrated on fundraising for the building of the shaft, which was estimated at \$1,000,000.

In 1848, Congress donated 37 acres of land for the proposed monument. The Monument's cornerstone was laid during a Fourth of July ceremony that same year. An estimated crowd of 20,000, including President James K. Polk, George Washington Parke Custis, Dolley Madison, James Buchanan, Andrew Johnson, and Congressman Abraham Lincoln, witnessed Masonic rituals and a fireworks display.

Construction continued under the direction of Superintendent William Daugherty until 1854, when funds were exhausted. In 1855, Congress voted to appropriate \$200,000 to continue construction; however, the funds were rescinded when the Know-Nothing political party illegally gained control of the Washington National Monument Society. Although the Know-Nothings added three courses of masonry to the Monument, these courses were made of inferior marble and were later removed. In 1858, the Know-Nothings returned records and control of the Monument's construction to the Society. The Civil War and subsequent lack of funds further delayed construction; the Monument stagnated at 156 feet for 20 years.

As the war came to a close, the nation struggled to become a Union again. The abandoned Washington Monument, standing among the debris of cattle pens, trampled Grounds, and broken stones, characterized what war had done to the country. Once a symbol of Washington's accomplishments and hope for the young country's future, it was looked upon as an object of embarrassment. However, the National Centennial in 1876 renewed public interest in completing the Monument. In his second term of office, President Ulysses Grant signed and Congress passed a bill for \$2,000,000 to complete the structure. The Society turned the monument and Grounds over to the government and construction resumed in 1878 under the direction of Lt. Colonel Thomas L. Casey of the US Army Corps of Engineers. Casey altered Mills' original design and proposed an unadorned Egyptian obelisk with a pointed pyramidion, which was compatible with the popular 19th Century Egyptian Revival style.

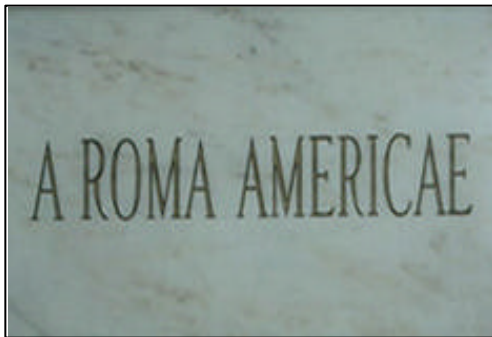
The U.S. Army Corps of Engineers determined the foundation to be inadequate to support the weight of the total Monument and, subsequently, enlarged it in 1878. A steam-powered elevator was installed to help lift the blocks of marble up to the work areas as the project climbed higher and higher. On December 6, 1884, the 3,300-pound capstone was placed at the top and was crowned with a 9-inch-tall aluminum pyramid. At this time, the aluminum pyramid was the largest piece of aluminum ever cast. The Monument was dedicated on February 21, 1885 by President Chester A. Arthur. However, the Monument did not open to the public until October of 1888, 40 years after the cornerstone was laid and more than 100 years after a monument to George Washington was proposed. During the 3-year period between the dedication and the admission of the public, the stairwell was finished, the elevator platform was converted to a passenger car, lightning rods were installed, and a lighting system was incorporated into the stairwell. Congress shifted control of the



The Monument under construction.



The 1998 restoration of the Washington Monument.



One of the commemorative stones which line the Monument stairwell.

Monument and its staffing to the War Department, with the Washington National Monument Society in an advisory role.

Routine maintenance was performed on the Monument during the 1900s. In 1998, a comprehensive restoration project was initiated. The Washington Monument Restoration Project (1998-2002) included repair and repointing of the exterior stones, replacement of the windows, repair of the lighting protection system, repair and cleaning of the commemorative stones in the stairwell, and installation of sensors on the exterior to detect future damage. The project upgraded the heating and air-conditioning systems, upgraded the elevator's mechanical systems, and installed new cables and safety devices. The observation deck at the 500-foot level and the 490-foot level were remodeled, which involved putting in new flooring, walls around the elevator, a new lighting system, an improved air conditioning system, and a new glass protection system around the marble walls and buttresses. New exhibits were installed on the 490-foot level. New and larger pictures of the city were placed over each window of the observation deck to identify landmarks.

The Structure and Its Engineering

The Washington Monument is a notable accomplishment in structural engineering for its period. The Monument stands 555 feet, 5-1/8 inches tall; 500 feet constitute the shaft, while the remaining feet form the capping pyramidion. The shaft tapers from a base width of 55 feet, 1-1/2 inches to a width of 34 feet, 5-1/2 inches at the 500-foot level. The walls range in thickness from 16 feet at the base to 18 inches at the upper shaft. The Monument's original 156 feet were made of white marble from Texas, Maryland. However, several blocks of white marble from Massachusetts were added to the original structure and the rest of the Monument was made of white marble from a quarry in Baltimore County. The discoloration on the exterior sides clearly marks the older structure from the later one. Since the marble came from three different quarries, it did not weather the same; therefore, it was impossible to match the later marble to the older perfectly. Granite from Maine reinforces the interior walls up to the 452-foot level; from there to the top, the walls are marble.

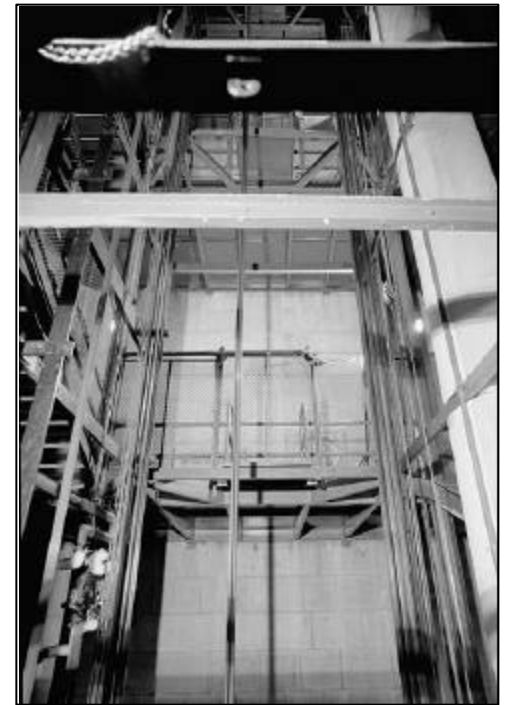
Interior: Interior ironwork helps supports the entire Monument. A flight of 896 interior steps rises to the observation area in the pyramidion. There are 195 commemorative stones, donated by various states, Native American nations, private organizations, and foreign countries, set in the walls along the stairway. Many stones have been restored.

Elevator: The stairs encircle a central elevator shaft. When the Monument opened in 1888, the first elevator was a steam hoist, which was used until an electric elevator was installed in 1901; this elevator could run to the top in 5 minutes and carry 35 passengers. Another elevator was installed in 1926. In 1959, a new elevator was installed to ascend and descend in 60 to 70 seconds and carry 25 passengers. In 1998, a new elevator control panel was installed that enabled the elevator to ascend and descend in 60 seconds. A new elevator cab with glass doors to view the commemorative stones and a capacity of 25 passengers was installed in 2001.

Observation Deck: The viewing area contains two windows on each side; the windows on the east are larger for exterior access. The windows were originally unglazed and could be closed using interior shutters that swung flush with the surface. In 1926, metal bars were hinged above each window on the inside. In 1959, the bars were replaced by safety glass panels, which were flush with the exterior masonry at the sills but projected at the window heads. Under certain light conditions, the projections cast shadows and made the windows appear larger than they are. The interior shutters remained until the installation of protective glass wainscoting on the interior walls in 1975.

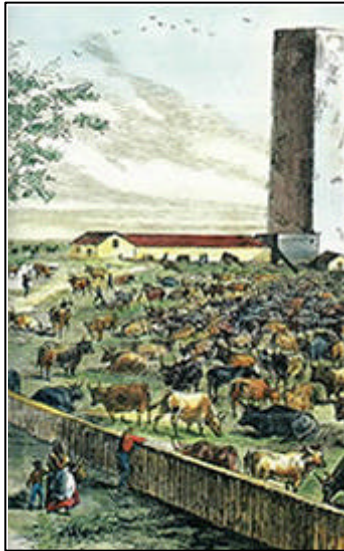
Safety: In 1885, a system of lightning conductors was installed on the aluminum capstone at the tip of the Monument. In 1929, searchlights to outline the top of the Monument to air traffic were installed. In 1931, aircraft-warning lights were hung from the observation windows to replace the searchlights. In 1958, warning signals were positioned above the windows for better visibility. In addition, floodlights were installed on the Grounds to light the Monument against the night sky.

Visitor Comfort: In 1904, a lobby was developed with mosaic and marble wainscot flooring, electrical lights, steam heating, and four oak settees for visitor comfort during their wait for the elevator. In 1972, revolving glass doors were installed at the eastern end of the entrance corridor but were replaced by standard glass doors 2 years later. In 1976, a wheelchair access ramp to the elevator was added, eliminating the outside step into the Monument.



The Monument elevator shaft.

Monument Grounds and Other Contributing Elements



Cattle on Grounds during Civil War

The Monument and its landscaped Grounds are central to the Monumental Core of the Nation's Capital and are anchors of the National Register-designated L'Enfant and McMillan Plans for Washington D.C. While the Monument Grounds have been altered significantly since the Monument's construction, the basic "grassy mound" is extant today and is an important feature in the overall rolling landscape of the Monumental Core. The obelisk sits atop a smooth hill, or grassy mound, that is balanced by informal plantings, gentle curves, and asymmetrical edges. The Monument's placement in the gently sloping lawn provides a fitting contrast for its singular geometric mass.

When Charles Pierre L'Enfant set aside the site for the Monument in his 1791 Plan, it was at the edge of the Potomac River. The entire National Mall area was used as grazing and agricultural lands. During the Civil War, the Monument Grounds were a drilling field for Union troops. Fencing was placed around the perimeter of the Grounds to contain herds of cattle, which were intended to feed the Union Army. Sheds were built on the Grounds to store hay and a slaughterhouse was located nearby.

After the Monument's dedication in 1885, elaborate plans for terracing the Grounds were proposed, such as an ornamental retaining wall connected to a tiled esplanade by two broad double stairways. However, they were abandoned in favor of a simpler landscaping project that proposed to deposit fill from the creation of East Potomac Park around the Monument to cover the foundation, bring the Grounds up to grade and let the earth slope gradually away from it on all sides. Paths were laid out, trees and shrubs were planted, and the entire grassy mound was completed in 1888. When the Monument was dedicated, marshland bordered it to the south and west; however, land that had previously been inundated by the Potomac River began to be reclaimed at the turn of the century.

The Grounds have changed as the cultural and political climate of the nation's capital dictated. In 1890, a statute provided for construction of children's playgrounds on the Washington Monument Grounds to mitigate undesirable residential conditions in the city. Early in the century, baseball diamonds and tennis courts covered portions of the Grounds. During World War II, temporary military installations were built west of the Monument but were removed shortly after the war. Over the years, NPS maintenance facilities have come and gone and the configuration of roads and

pathways to the Monument has changed. In previous years, cars were able to park at the base of the Monument. Cars presently use the parking lot, which most likely was constructed to serve the military installations nearby during World War II, that is located northwest of the Monument off of Constitution Avenue.

Elements of the Monument Grounds that are contributing elements to the National Register include:

Survey Lodge: The Survey Lodge is located approximately 750 feet southwest of the Washington Monument and is a contributing resource to the Grounds. William Bradley constructed the Survey Lodge in 1886 using leftover granite and marble from the Monument. The structure originally contained boilers that produced steam, which was piped underground to power the Monument's elevator. It is a small, one-story structure, square in plan. A five-step main entrance, which is situated under a shallow projection with a gabled peak, is located on the western end of the building's north side. Two windows are set back and located 2 feet from the gabled end. This pattern of two windows and a gabled entrance is repeated on the building's eastern side. However, the eastern side also has a closed-off opening by the door. The west wall has four windows but no entrances, while the southern wall has no windows or entrances. The interior of the building has been partitioned into various offices and serves as the NPS Ranger Station for Mall Operations. The basement, which once housed boilers, now is used for storage.

Monument Lodge (Marble Lodge): The Monument Lodge, which is located approximately 480 feet east of the Washington Monument, is a contributing resource to the Grounds. The small, one-story, flat-roofed structure was built in 1888 using leftover granite and marble from the Monument. This building was built as the home for the Monument custodian and as storage for the Society's records. It also provided restroom facilities for visitors who met there before walking to the Monument.

The Lodge is rectangular in plan, measuring 43 feet by 24 feet with a polygonal central bay on the western side. A 21-foot central porch is located on the eastern side and extends 2½ feet out from the wall. This porch is recessed into the front wall, faced with yellow brick, flanked with windows, and screened by two marble Doric columns in-antis. The front door is 6 feet wide. In addition to the two windows on either side of the porch, one casement window is located on either end of the eastern side and placed high in the wall above plain stone panels. Shrubbery conceals the stone panels and the decorative pilasters applied to the central mullions and side sashes. The Lodge was



Survey Lodge.



Monument Lodge.

remodeled in 1931, 1942, and in 1963, when a large cinderblock lean-to addition was attached to the west wall. Today, the Lodge is used as a restroom, snackbar, and souvenir shop. An aluminum awning is added to the structure in the summer. This addition and awning partially conceal the polygonal bay and detract from the historic qualities of the structure.



View from the west to Monument plaza.

Washington Monument Flags: The Washington Monument Flags are a contributing resource to the Washington Monument Grounds. In 1937, 48 temporary wooden flagpoles displaying American flags – one for every state in the Union - were arranged in a circular colonnade around the Monument for special events and George Washington’s birthday. In 1959, the wooden staffs were replaced by 50 permanent poles; the poles are grounded in concrete and stand approximately 24 feet tall. Today, the circle of flagpoles helps define a precinct around the Monument and provides a scale reference.

Jefferson Pier Marker: This small monument, a contributing resource to the Washington Monument Grounds, is located 371.6 feet west and 123.17 feet north of the Washington Monument. This monument marks the site that the L’Enfant Plan had set aside for the Monument – the spot where the east-west axis of the Capitol intersects with the north-south axis of the White House. The original stone was placed in 1804, during Thomas Jefferson’s presidency to mark the location of a planned “National Meridian Line,” similar to the Prime Meridian Line passing through Greenwich, England. The marker later functioned as a benchmark for the Monument, a survey point for the city’s land plats, and as a mooring post for the old canal until it was leveled and used for the bed of a nearby road. The foundation was infilled with dirt and virtually forgotten until 1889, when the site was rediscovered and a 2-foot by 2-foot block of granite was erected on the original foundation. Today’s marker stands 3 feet, 3 inches tall and is inscribed with “Position of Jefferson; Pier erected Dec 18, 1804; Recovered and re-erected; Dec 2, 1889; District of Columbia.”

Other elements and structures on the Washington Monument Grounds include:

Bulfinch Gatepost: A gatepost designed by Charles Bulfinch for the U.S. Capitol Grounds is located near the northeast corner of the Monument Grounds. The Gatepost was listed on the National Register in a separate nomination. Although it is not considered a contributing resource to the Register-designated Washington Monument Grounds themselves, the Gatepost is an important historic resource.

Sylvan Theatre: The Sylvan Theatre complex is located in a small depression, 150 yards south-southeast of the Washington Monument near Independence Avenue. The complex is not considered historic and is not a contributing resource to the National Register-designated Washington Monument site. In 1917, the first theatrical facility was erected on the site; it was an earthen platform surrounded by shrubbery, with landscape contours forming a natural viewing area for the stage. By 1944, a stage structure existed on the site. The present theatre is an open-air theatre approximately 60 feet long, 40 feet wide and 40 feet tall. The rectangular stage sits 4 feet above ground level and can be reached by steps in the front. The façade is dark brown wood and the interior is painted black. Shrubby serves at the backdrop and iron girders support the edifice. A large green light boom frames the stage. This facility is used for numerous special events and activities, including the annual NPS Independence Day celebration.

After 1966, four brown, tin, flat-roofed buildings were erected adjacent to the sides of the theatre. The two larger buildings are used as dressing rooms. They are 35 feet by 15 feet in size and 10 feet tall, with one entrance on the south side and two entrances on the side facing the stage. The two smaller buildings are between the larger buildings and the stage; one building is an electrical center and the other building is a storage room. A large, circular restroom is located to the rear of the theatre. The other restroom is a green, metal portable station; it is located 100 feet west of the theatre and used on special occasions. A major renovation of the complex occurred in 1976; consequently, the facility is not considered historic.



Sylvan Theatre.

Historic Plans and Development of the National Mall

In the earliest plans for the city, the area from the Capitol to the present site of the Washington Monument was intended as parkland. George Washington established the original boundaries of the National Mall on March 2, 1792. In 1820, Congress granted the first Mall site to the Botanic Gardens and another site to the Smithsonian Institution in 1846. As interest in the Mall grew, plans for beautifying the Mall continued until the onset of the Civil War, when the area became inundated with troop encampments and cattle yards. In 1871, the Baltimore and Potomac Railroad Company constructed a depot on the Mall, and from 1882 until 1908, dredging and fill operations created East Potomac Park and West Potomac Park.

At the turn of the century, the Mall's appearance was becoming more stable. In 1901, the McMillan Commission proposed restoration of the Mall and accepted the original L'Enfant Plan as the foundation of the city's development. Starting in 1933, NPS received jurisdiction over the public buildings and reservations formerly administered by the Director of Public Buildings and Public Parks of the National Capital.



1791 L'Enfant Plan of the District.

L'Enfant Plan of 1791

L'Enfant's Plan of Washington, DC is the sole American example of a comprehensive Baroque city plan with a coordinated system of radiating avenues, parks, and vistas overlaid upon an orthogonal grid of streets. The Plan defines the physical and symbolic character of the nation's capital city through its arrangement of buildings, structures, and views. L'Enfant's Plan dictated that a monument to Washington should be built where the east-west axis from the Capitol along the National Mall to the western horizon intersects with the north-south axis from the White House to the southern horizon. When construction began in 1848, however, the site was determined to be marshland and the Monument was consequently erected 351.6 feet east and 123.17 feet south of the intersection. L'Enfant also intended the National Mall to be the site of ambassadorial residences. The L'Enfant Plan was listed on the National Register in 1966 and on the DC Inventory of Historic Sites since 1964. The National Register nomination for the L'Enfant Plan was updated in 1997 to include the features created with the implementation of the McMillan Plan.

McMillan Plan of 1901

The Senate Park Commission of 1901, known as the McMillan Commission, expanded the L'Enfant Plan to create the most elegant example of City Beautiful tenets in the nation. The Commission successfully removed the railroad tracks from the Mall and extended the Mall axis 1 mile to the west to create a site for the Lincoln Memorial.

The McMillan Plan intended to reconcile the relocated Washington Monument with the L'Enfant Plan geometry and its original siting for the Monument, as well as reserve the Monument Grounds for public enjoyment. The McMillan Commission proposed that the Monument be flanked by formal, sunken gardens to the north and south; to the west, the design proposed a 300-foot-wide marble staircase that descended 40 feet from the platform to an oval pool and another formal sunken garden. The Monument's reflection in the oval pool would create the illusion that the Monument had been realigned with the north-south axis from the White House. While the design would have fulfilled the desired geometric integrity of L'Enfant's Plan, structural concerns and costs led the commission to abandon the proposed redesign. The features implemented from the 1901 McMillan Plan are National Register-designated resources included in the 1997 nomination of the L'Enfant Plan.

A development plan for the Mall was put forth in 1933 by Harold Ickes, Secretary of the Department of Interior and Administrator of the Public Works Administration, to improve the water services, transportation flow, and design in accordance with the L'Enfant and McMillan Plans. The plan encompassed the Mall Union Square, and the plot of land joining the Mall and the Capitol Grounds and built upon the guidelines prepared by Frederick A. Delano, and other commissioners according to their interpretations of what L'Enfant and McMillan would have advocated for the Mall. This vision included an open vista between the Capitol and Washington Monument with the removal and replanting of trees, grading of the landscape, and a geometric organization of public buildings.

Recent Plans

The 1966 National Mall Plan sought to maintain the integrity of the principal east-west axis of the L'Enfant Plan through formalized settings. The 1973 Comprehensive Design Program for a



1901 McMillan Plan of the District.



Rendering of the McMillan Plan.



The 1998 Monument Restoration

Proposed Visitor Facility proposed an underground structure aligned in a generally symmetrical fashion around the Monument and connecting via a ramped underground passageway to a below-grade elevator landing.

In 1981, the DCP recognized that “design continuity is lacking, graceless and unsymmetrical features diminish visual quality, and modern structures and facilities intrude on vistas and detract from the site’s integrity” and incorporated the best of the previous plans to define the Grounds to be compatible with other parts of the Monumental Core. In 1982, the 1981 DCP was modified to add landscape improvements and above-ground buildings. A 1986 Plan, which included an above ground concession building in the viewshed, was rejected by Federal review agencies. The 1981 DCP was further modified in 1989; this DCP recommended four principal proposals: (1) visitor services would shift from the Monument base to buildings in the Sylvan Theatre area; (2) the Monument Plaza would not accommodate a large seating area but instead would have a grassy area for passive use; 3) 15th Street, Madison Drive, and Jefferson Drive would be realigned; and (4) the Monument Lodge would be restored to its original 1888 appearance.

The 1993 DCP further modified the 1989 DCP by proposing restoration and adaptation of the Monument Lodge as the entrance to a new underground visitor facility and walkway modifications to meet universal accessibility. Various elements of the DCP have been realized, such as the realignment of 15th Street (and Madison and Jefferson Drives), improvement of walkways connections of the east side of the Grounds, and the relocation of the tourmobile stops along 15th Street out of the National Mall viewshed. Other elements remain to be completed, such as restoration and adaptation of the Monument Lodge as a portal to the visitor facility, various walkway modifications, improvements to the plaza at the Monument’s base, removal of the 16th Street parking lot, and completion of the German-American Friendship Garden. In 2002, the DCP was modified to reflect the Olin Partnership design concept approved by the NCPC and CFA (Figure 4.2.2-1).

Regardless of their design nuances, the various iterations of the DCP have maintained the spirit of the L’Enfant Plan by maintaining the primary structures and monuments “as dominant elements in the landscape” and fitting the plan to the site’s topography. The plans accommodate modern needs within the “goals of preserving and enhancing important vistas, ensuring harmony and continuity with adjacent monumental areas, and enhancing the quality of the visitor experience.”

Figure 4.2.2-1
2002 Modified DCP



4.2.3 Cultural and Ethnographic Resources



An event on the National Mall.

The Washington Monument Grounds is considered a cultural landscape. The open space and parklands of the Grounds and the Monumental Core area create a highly visible stage for public expressions of remembrance, celebration, and protest. Although the land uses and functions of many buildings of the Monumental Core and National Mall area have departed from L'Enfant's intent, the building of the Washington Monument itself helped retain the open space for use as a place for public assembly and recreation.

Since the Monument's dedication, it has gained historical significance as a focal point for public gatherings. In 1887, National Guard forces converged on the Washington Monument Grounds to compete in friendly drills and competitions. During the Spanish-American War, troops stopped to rest on the Grounds' green slopes before proceeding to Cuba. In both World War I and World War II, the broad grassy knoll served as a parade ground and assembly field. The Grounds also hosted a large Bond Rally in 1945; 350,000 people congregated in the area to view fireworks and to watch performances by movie stars.

The Monument Grounds provide a natural forum for patriotic events. For example, the Grounds were the site of a Bicentennial celebration in 1976; half a million people crowded the Grounds for concerts, picnics, and fireworks. The celebration is continued every Fourth of July, when spectators flock to the Grounds and the National Mall for one of the nation's largest celebrations. On Washington's Birthday in February, various patriotic groups gather to lay wreaths and make speeches about George Washington. In the summer, the Sylvan Theatre presents military concerts and award ceremonies.

The Mall and the Monument Grounds have a long tradition of hosting public demonstrations. Americans worked on the Mall in temporary buildings during World War II; the Vietnam War attracted protestors who used the Lincoln Memorial and Monument Grounds to express opinions; and the historic 1963 March on Washington transformed the Mall into the stage for Civil Rights demonstrations. The Monument Grounds and National Mall continue to serve as the forum for national debate and public expression today. In 2001, NPS granted more than 3,000 permits for public gatherings or demonstrations on parklands in the Monumental Core of Washington, DC.

In addition to patriotic events and public demonstrations, the Monument Grounds host a diverse array of activities, festivals, concerts, and cultural and recreational events throughout the year. For example, the Grounds host the Smithsonian Kite Festival and some of the Cherry Blossom Festival events in late March or early April. During the summer, the annual Folklife Festival, which showcases music, dance, celebratory performance, crafts and cooking demonstrations, storytelling, and narrative sessions for discussing international cultural issues, is held nearby on the National Mall. Throughout the summer, informal softball games are played on the Grounds. In early September, the National Frisbee Championship is held on the Grounds. Since some events require large open areas for the event and associated tents and stages, these events normally occur in the flatter topography north and west of the Monument itself.



U.S. Army Band Concert at the Sylvan Theatre

4.2.4 Visual Resources

Visual Characteristics of the Site



The Monumental Core of Washington, DC.

The Washington Monument site is located within the Monumental Core where the axis of the Capitol Building and the Lincoln Memorial intersect with the axis of the White House and the Jefferson Memorial. The site currently has a scattering of permanent historic structures and a landscape that is rolling and park-like.

The close-in portions of the Washington Monument Grounds are bounded on all sides by streets. Constitution Avenue to the north, Independence Avenue to the south, and 14th Street to the east are major pedestrian and vehicular traffic routes. Another major pedestrian and vehicular route for north-south traffic that bisects the Grounds is 15th Street. The western boundary of the Washington Monument Grounds is 17th Street, which terminates where it meets Independence Avenue at the Tidal Basin; it receives moderate use of about 30,000 cars per day.



View Eastward to the U.S. Capitol with jersey barriers in foreground.

A handful of built structures exist on the Monument Grounds. The most prominent structure is the Washington Monument itself. It is located towards the center of the Grounds, a few hundred feet east of the exact intersection of the monumental axes. A circle of flagpoles defines the plaza at the foot of the Monument. To the east of the Monument along the axis to the Capitol lies a small stone building known as the Monument Lodge, which provides food service, a gift shop, and restrooms. The Sylvan Theatre is located to the south of the Monument Lodge in the southeast corner of the Monument Grounds. The Survey Lodge is located to the southwest of the Monument and houses the NPS Ranger Station. A Bulfinch Capitol Gatepost is located at the intersection of 15th Street and Constitution Avenue. The Jefferson Pier Marker is situated in the location of the intersection of the monumental axes. A ticketing kiosk can be found along 15th Street north of the Monument Lodge. As an emergency security measure, NPS has installed temporary security barriers and a temporary visitor screening facility at the east entry of the Monument base.

The Monument sits atop the crest of a grassy mound. The land gently slopes to all sides. In a circular formation at the top of the mound, the temporary security barriers are currently located at a distance of 200 feet from the Monument. The concrete jersey barriers unfortunately detract from the Ground's visual integrity by interrupting the simplicity of the gentle slope around the

Monument. Within the circle of barriers and radiating about 80 feet from the Monument's base is an exposed aggregate and asphalt plaza from which visitors can see the dramatic views and vistas to the Monumental Core. The plaza area is flat and uneventful since it once served as a roadway. A concrete curb acts as the plaza's edge.

Beyond the plaza, the concrete jersey barriers, and the grassy mound, the existing landscape around the Monument Grounds includes formal street trees of multiple elm species. The trees are located along 17th Street and Constitution Avenue with a gap in the 17th Street trees along the axis to the Lincoln Memorial. Trees along Constitution Avenue are aligned in a single row behind the sidewalk fronting the street. The single line of trees along 17th Street, however, is located between the sidewalk and the street. The elm trees along Independence Avenue are aligned opposite each other along the street coupled with informal clustering of mixed species behind. There is no apparent street tree treatment for 15th Street, but it has a clustering of mixed species of trees to the south of the buildings that provide shade to waiting visitors. Along 14th Street, the trees are clustered near Independence and Constitution Avenues. Stands of cherry trees exist to the northwest, and northeast of the Monument, and at the Sylvan Theatre. The landscape directly adjacent to the Washington Monument is primarily a gently sloping lawn hill with a unique mulberry tree stand to the southwest. The German-American Friendship Garden comprises a landscape of low shrubs, perennials, and grasses located along Constitution Avenue and is bifurcated by the entrance to a parking lot on the Monument Grounds.



View from Monument Plaza to the northwest with jersey barriers.

Urban Context

Visible from miles away, the Washington Monument is considered the foremost memorial to George Washington while symbolizing the center of the Monumental Core where it is the most prominent structure upon the largest open space in the heart of the Nation's Capital. The landscape of the Monumental Core on the east-west axis between the Capitol and the Lincoln Memorial has a formal aesthetic quality likened to a French boulevard with its broad linear open space reinforced with allees of elm trees. In contrast, the north-south axis between the White House and the Jefferson Memorial is less linear with more of a park-like characteristic using more organic forms to define visual space.

With the prominence of the Washington Monument and its setting, it is of the utmost importance to consider viewsheds both to and from the Monument, since clear views and vistas can be seen in all directions. From the surrounding urban landscape, the Monument itself is visible from major highways and other various access points into the District of Columbia. Meanwhile, some of the Capital's most dramatic views and vistas are within both the Monumental Core's east-west and north-south axes and are often associated with the Washington Monument.

East-West Axis



View from the Lincoln Memorial across the Reflecting Pool to the Washington Monument.

From the Capitol to the Washington Monument along the east-west axis of the Monumental Core, segmented panels of lawn lay between tree allees and rows of buildings, creating large areas of space frequently used for demonstrations, festivals, and recreation. The view to and from the U.S. Capitol is one of the most stunning and well-known vistas of our nation. From the vantage point of the Washington Monument, one can look toward the Capitol past the expanse of open space defined by the tree and building allees. However, the foreground of this view tends to be dominated by the Monument Lodge. Additionally, on the Capitol side of the Monument, light fixtures distract from the visual integrity of important views both to and from the Monument.

There is a contrasting visual character of the east-west axis between the Washington Monument and the Lincoln Memorial. This portion maintains the allee of elm trees that provides apparent symmetry and balance, yet it is not reinforced by architecture as in the axis to the Capitol. Instead of a central green space, there is a reflecting pool and the future World War II Memorial now under construction. Between the two quadrants that stretch from the Capitol to the Lincoln Memorial, the gently sloping lawn of the Washington Monument Grounds provides an expanse of open space in the east-west axis pattern, recognizing the intersection of the north-south axis. Therefore, views and vistas on the Lincoln Memorial side of the east-west axis are primarily uninterrupted with the exception of the construction activities associated with the World War II Memorial. The visual quality is heightened by the visitor's ability to see the Lincoln Memorial beyond the reflecting pool. This view is of particular interest since it faces the sunset from the Washington Monument.

North-South Axis

The north-south vista between the White House and the Jefferson Memorial, across the Monument Grounds, is extremely special in Washington. It is more subtle than most major vistas but extremely powerful. Trees are carefully pruned to help frame the reciprocal view.

The Monument Grounds act as a threshold to less architectural and more naturalized settings to the north and south. In this corridor, one of the most effective scenes is of the White House and the well-known Ellipse that is its foreground. The south side of the White House is best seen from the high vantage point of the Monument's Grounds.

The southern viewshed between the Washington Monument and the Jefferson Memorial is also of value with its extremely naturalized and organic landscape. The axis to the White House includes the Ellipse, a lawn area that is symmetrical in form, but does not emphasize a linear connection as is apparent in the east-west axes. The axis to the Jefferson Memorial is the most irregular of the four axes. The axis is purely visual due to the Tidal Basin, which impedes travel along the southern axis. There is no apparent symmetry along the southern axis and the traffic patterns of both pedestrians and vehicles bend in the same curvilinear manner of the Tidal Basin.

The Monumental Core and the surroundings of our nation's capital can be fully appreciated through these powerful views and vistas to and from the Washington Monument. These vistas are critical components of the landscape. Additionally, wayfinding at the Monumental Core is also heavily dependent upon the clarity of the views.



View from Monument observation deck north to the White House and Ellipse.



The Eastern section of the Monumental Core with the Tidal Basin in the foreground.

4.3 VISITOR USE AND EXPERIENCE



Monument security screening facility.



Security screening facility, jersey barriers, and U.S. Park Police patrols.

The Washington Monument is part of the Monumental Core and is administered by a unit of NPS known as National Capital Parks-Central. The other memorials that are part of the Monumental Core include the Jefferson Memorial, the Lincoln Memorial, the Franklin Delano Roosevelt Memorial, the Vietnam Veterans Memorial, and the Korean War Veterans Memorial. Many visitors to Washington D.C. and the Monumental Core visit these memorials, as well as the Washington Monument.

For the past several years, the Washington Monument has been under restoration. During some of this work, access to the Monument observation deck was closed to visitors. The Monument reopened in February 2002.

The Monument is currently open from 9:00 a.m. to 5:00 p.m. 7 days per week. Between Memorial Day and Labor Day, the Monument is open from 8:00 a.m. to 12 midnight. To visit the interior of the Monument, visitors must acquire a free ticket. These tickets are available daily beginning at 8:30 a.m. (8:00 a.m. in the summer) at the ticket kiosk located northeast of the Monument along 15th Street at Madison Drive. Generally, the tickets for a given day are distributed by 10:30 a.m. although the ticket booth remains open until 4:30 p.m.

4.3.1 Visitation Patterns

Total visitors to NPS sites in the District of Columbia numbered 28.8 million in the year 2000. Of those visitors, approximately 20 million visited National Capital Parks – Central, which includes the National Mall and the Washington Monument. Visitation to the interior of the Washington Monument was only 185,000 in 2000 because of closures related to the Monument restoration. Prior to the restoration, yearly visitors to the interior averaged 950,000 in 1995, 707,000 in 1996, and 841,000 in 1997. Visitors to the National Mall and the Washington Monument are not expected to increase in 2002, but remain stable, according to NPS estimates. Although visitation to the interior of the Monument is limited to slightly less than 1 million visitors annually due to the capacity of the elevator, free access to the Grounds and the base of the Monument is unimpeded.

Visitor Characteristics

People visiting the Washington Monument are diverse in group size and structure, age, background, and other characteristics. A visitor study, conducted in June 1998 at four national monuments and memorials in Washington, D.C., including the Washington Monument, revealed the following (Littlejohn and Hoffman, 1999):

- *Group size and structure* – Most visitor groups were families (66%). Group size varied between two people (25%) to three or four people (38%). Large groups (6 or more) represented 21% of all visitors.
- *Age* – The most common age group was children aged 15 years or younger (28%) followed by adults aged 36 to 45 (25%).
- *Number of times at the National Mall* – Over 56% visitors were visiting the monuments and memorials for the first time. Thirty-six percent had visited the sites two to four times.
- *Visitor origin* – Only 7% of visitors were from foreign countries of which the largest percentage was from Germany. U.S. visitors were from California (9%), Virginia (6%), Pennsylvania (6%), Washington D.C., and 45 other states.

Visitors most often walked (75%) to arrive at the Washington Monument and the other memorials, followed by use of the Metrobus or Metrorail (36%) and the tourmobile (17%), noting that more than one form of transportation could be used. These arrivals occurred primarily in the vicinity of the Washington Monument or the Vietnam Veterans Memorial and Lincoln Memorial. The most common reasons for visiting were to see the site, learn about U.S. history, and show friends and relatives the Monument and memorials.

On their visit to the Washington Monument and other nearby memorials, visitors commented that they enjoyed interpretive services that emphasized the historical significance of the site. They also liked the cleanliness, well-maintained appearance, and accessibility of the sites. The importance of the view from the Washington Monument was also mentioned. Some of what visitors liked least



Visitors queuing up in preparation for security screening for entering the Washington Monument.

was the lack of parking close to the sites, the amount of walking required, the long wait in lines, and the hot weather.

4.3.2 Visitor Experience

Access and Orientation

Visitors first begin to experience the Washington Monument and nearby memorials as they plan for their visit to Washington, DC. According to the 1998 visitor survey, more than half (53%) of all visitors relied on friends and relatives who had previously visited the site, 43% consulted a travel guidebook, 21% consulted the newspaper, and 16% checked the internet. Of all visitors, 18 percent received no information prior to their visit.

Once in Washington, DC and in the Monumental Core, visitors use a variety of services to navigate the site and find needed information, including the color site brochures, assistance from ranger staff, the “*Washington: The Nation’s Capital*” brochure and map, outdoor maps, and visitor information kiosks. On site at the Washington Monument, NPS rangers provide information to visitors as they arrive for their tours or stop by during their visit to the city. Books and other site information are also available in the Monument Lodge.

Washington Monument Tour

Ticketing: Visitors who would like to ascend the Washington Monument must acquire a free ticket specifying a time to ascend. Reservations for tickets may now be made in advance over the internet (<http://reservations.nps.gov>) or via phone. Those making advance reservation are charged a \$1.50 service fee per ticket and a \$0.50 handling fee per order. Tickets are either mailed to the visitor or they are held for pick-up at the ticket kiosk near the Monument. Of the daily tickets available each day, 35 percent are now available via this mechanism with the remainder held for daily distribution. If advance reservations prove to be successful, the NPS would like to increase the percentage of tickets available via this method in the future.

The other ticketing option for visitors is to arrive at the ticket kiosk at 15th Street and Madison Drive between 8:30 a.m. and approximately 10:30 a.m. on the day they would like to tour the Monument (between 8:00 a.m. and 10:00 a.m. during the summer months between Memorial Day and Labor



Visitors to the Washington Monument encounter pathways that need improvement.



Ticket Kiosk at 15th Street.

Day). These tickets are distributed free-of-charge on a first-come, first-served basis to individuals, families, and groups. The ticket limit is six per individual and 60 per licensed tour provider.

Tour Process: Tour times are provided on the hour and the half-hour beginning at 9:00 a.m. and ending at 4:30 p.m. (between 8:00 a.m. and 11:30 p.m. during the summer). Upon arriving at the Washington Monument, visitors holding a ticket stand in one of two waiting lines on the Monument's east side near the temporary security screening facility. One line is for those with tickets for the tour on the hour and the other is for the tour on the half hour.

At the tour's appointed time, NPS Rangers begin moving small numbers of the tour into a waiting area outside the security facility, cordoned off by ropes. Visitors are then ushered into the small screening facility that connects directly to the base of the Monument. Security personnel explain the screening procedure and require visitors to remove all money, watches, and other metal items from their person and pass them through the screening devices. At the direction of the security personnel, visitors walk through the highly sensitive screening system one individual at a time. If the device emits a sound, then that visitor must be brushed with hand-held screening devices.

Upon clearing security, visitors enter the base of the Monument and wait on benches along the wall for the elevator. When the elevator arrives, visitors enter the elevator until it is at capacity. An NPS ranger operates the elevator and offers brief information about the Monument in the 70 seconds that it takes the elevator to ascend to the Observation Level at the Monument's top. When visitors alight from the elevator, they are free to spend an indefinite amount of time viewing Washington from the Monument windows and to study the exhibits on the floor below. To return to the Monument base, visitors walk down one flight of stairs to a lower floor to board the elevator. Exhibits regarding the history of the Monument and George Washington and a variety of books are available for viewing or purchase while waiting for the return elevator.

The return elevator journey is slightly longer than the ascent, taking a few minutes. On the descent, the elevator slows occasionally and the opaque panels in the elevator door become clear, enabling visitors to view some of the restored commemorative stones on the Monument's interior walls. The NPS ranger talks about the stones and answers visitor questions. At the base, visitors exit the Monument through a door on the side of the visitor screening facility, away from those visitors being screened prior to their tour.



Book Shop at top of Monument.



One of the 195 commemorative stones in the Monument stairwell.

4.3.3 Resource Interpretation

The features at the Washington Monument most enjoyed by visitors according to NPS staff include the views from the top of the Monument, the new ability to view the memorial stones from the Monument elevator, and the educational exhibits.

As noted during the description of the Monument tour, a variety of information is provided to visitors, primarily through interpretive exhibits in the Observation level at the top of the Monument and the floor directly below. At each of the windows in the Observation level, exhibits identify features in the current landscape and what was the historic landscape. Views to the north, south, east and west can be seen from the windows. Other exhibits focus on the history of the Monument and the history of George Washington. Information about the Monument and the memorial stones on the Monument's interior is also provided by an NPS ranger who operates the elevator as visitors both ascend to and descend from the top of the Monument.

A unique feature of the Washington Monument is the 195 commemorative stones that were placed on the interior Monument walls. Starting in 1848, the Washington National Monument Society invited states, cities, and patriotic societies to contribute memorial stones representing their respective location or group. The stones were to pay tribute to the character and achievements of George Washington and were to be durable; a product of the state's soil; and 4 feet long, 2 feet high, and 18 inches thick. Stones were provided by states throughout the country and by countries throughout the world in tribute to George Washington.

In the 1998 visitor survey, visitors were asked what subjects they would be most interested in learning about on a future visit. Most visitors (75%) are interested in learning about the history of the monuments and memorials, such as the Washington Monument. Visitors also want to learn about the people commemorated by the monuments and memorials such as George Washington. Over half of the visitor groups would prefer to learn the above information on a ranger-led walking tour. Brochures and ranger talks were the next most preferred method of learning.

Other Tours and Interpretation

Visitors to the Washington Monument often visit nearby memorials prior to or following their tour at the Monument. Visitors may view on their own or participate in tours at the Lincoln Memorial, Jefferson Memorial, Vietnam Veterans Memorial, Franklin Delano Roosevelt Memorial, and Korean War Veterans Memorial. The World War II Memorial is being constructed to the west of the Monument.

Tourmobile Sightseeing offers daily narrated shuttle tours to these and other sites on the National Mall and in Arlington National Cemetery. The Washington Mall tour includes the Washington Monument, Lincoln Memorial, Jefferson Memorial, West Potomac Park, Arlington National Cemetery, Bureau of Engraving and Printing, Holocaust Museum, U.S. Capitol, Union Station, Smithsonian museums, and White House and President's Park. One ticket allows unlimited free reboarding throughout the day at sites such as the Washington Monument. Boarding locations are located throughout the National Mall at the major monuments and memorials.



View of World War II Memorial construction site from top of Monument.

4.4 SOCIO-ECONOMIC ENVIRONMENT

4.4.1 Land Use

Land uses in the study area were inventoried to characterize the setting of the proposed security improvements to the Washington Monument. Inventories were conducted by field inspection and then cross-referenced by review of current planning documents and regulations. The documents include the *District of Columbia Generalized Land Use Map*, the *Comprehensive Plan for the National Capital*, *Federal Elements*, and various NPS information sources. Descriptions of land uses on and surrounding the Washington Monument are detailed below.

Site

The 73-acre Washington Monument Grounds are defined as the area of direct impact for this study. The Grounds are open Federal parkland, bounded by Constitution Avenue on the north, 14th Street on the east, Independence Avenue on the south, and 17th Street on the west. The site is presently used as a large park serving ceremonial, recreational, educational, and cultural functions. The park has both formal areas, such as the plaza around the Monument itself, and larger informal, pastoral areas, such as the rolling landscape farther away from the Monument's base.

Components of the site area include the following:

- The Monument Lodge, which is located east of the Monument on 15th Street, has a gift shop, public restrooms, and food concession stand.
- The Survey Lodge, which is located southwest of the Monument, is used as NPS offices. It also provides visitor information.
- The Sylvan Theatre, which is located southeast of the Monument, is used for free concerts, performances, and special events.
- The German-American Friendship Garden, which is located on Constitution Avenue and 16th Street, flanks the entrance to the existing parking lot. The garden was established to symbolize friendship between the German and the American people and to commemorate 300 years of German immigration and contribution to America.
- The open lawn areas around the Monument are primarily used for passive and active recreation, including walking, jogging, softball, kite flying, picnicking, and ball playing.

- Paved pathways between 4 and 12 feet in width radiate from the Monument to the northwest, southwest, northeast, southeast, and east. Residents and visitors use these pathways to traverse the Monument Grounds and the larger Monumental Core area. People also use these pathways for walking, jogging, and other recreational pursuits.
- The area around the base of the Monument is paved with asphalt and is used for the queuing of visitors who wish to ascend to the top of the Monument.
- An asphalt parking lot is located northwest of the Monument and entered from Constitution Avenue at 16th Street. The oval-shaped lot is 1.5 acres and can accommodate 108 cars but is not specifically designated for Washington Monument parking only.

Study Area

The Monumental Core can be considered a broader area of influence for the proposed security improvements to the Washington Monument and its Grounds. The Monumental Core is a broad greensward from the Capitol to the Lincoln Memorial and the White House to the Jefferson Memorial. The District of Columbia Generalized Land Use map categorizes the entire Monumental Core area as “parks, recreation and open space.” Land uses are institutional, such as museums, galleries, memorials, and other cultural uses. Popular tourist destinations in the Monumental Core include the White House, Lincoln Memorial, Jefferson Memorial, Franklin Delano Roosevelt Memorial, Vietnam Veterans Memorial, Korean War Veterans Memorial, National Museum of American History, National Museum of Natural History, National Gallery of Art (West and East Wing), National Air and Space Museum, Hirshhorn Museum of Art, Arts and Industries Building, Smithsonian Institution Building, Museum of African Art, Arthur M. Sackler Gallery of Asian Art, Freer Gallery of Art, Constitution Gardens, and U.S. Botanical Gardens.

Planning Controls and Policies

While private properties within the District of Columbia are subject to the zoning regulations of the District of Columbia, the regulations have no jurisdiction over U.S. Government properties. Therefore, the Site and Study area, which is NPS land, is not zoned. However, the District of Columbia Zoning Enabling Act (1958) gives the NCPC “in lieu of zoning” approval for height, bulk, number of stories, and open space for Federal buildings and projects. NCPC makes a decision on these aspects on a case-by-case basis.

The 1976 approved Master Plan for the National Mall provides the overall guidance and context for the Washington Monument Grounds. Pursuant to the Master Plan, there are approved development concepts for the Grounds, such as the 1993 DCP, which was based on the earlier 1989 and 1981 DCPs.

The Comprehensive Plan for the National Capital, Federal Elements (1977-1984, updated 1990) is the principal planning document adopted by NCPC for the planning of Federal facilities. The Plan represents a compendium of policies, known as elements, and recommendations about long-term development of Federal lands and the Federal interest in Washington, DC. The chapters entitled “Parks, Open Space, and Natural Features” and “Preservation and Historic Features” are particularly relevant to land use, as discussed in this EA.

The Parks, Open Space, and Natural Features element designated the Washington Monument Grounds as a Monumental Park. The following policy from this element is applicable:

- Monumental and Decorative Parks should serve as settings to enhance public buildings, monuments, and memorials; as such, their fundamental integrity should be protected. Additionally, they should serve as outdoor areas for displays and cultural activities, as well as areas for passive and controlled active recreational activities, including lunchtime picnics and gatherings.

Since the Washington Monument is designated in the document as a historic property and landscape, several policies in the Preservation and Historic Features element apply:

- New construction on Historic Landmarks or in Historic districts should be compatible with the historic architectural character and cultural heritage of the landmark or district. In design, height, proportion, mass, configuration, building materials, texture, color and location, new construction should complement the valuable features of the landmark or district, particularly features in the immediate vicinity to which the new construction will be visually related.
- The distinguishing qualities of character of Historic Landscapes should be protected and enhanced.

Since various elements of the Washington Monument Grounds, such as the Monument Lodge and the Survey Lodge are historic structures that contribute to the historic landscape, the following policy applies:

- Every effort should be made to provide for the continued, appropriate use of all Historic Properties. If the original use or an appropriate intensification of the original use is no longer feasible, appropriate adaptive uses consistent with applicable use regulations should be encouraged.

Since 15th Street, a designated Special Street, is part of the Washington Monument Grounds, the following policy applies:

- The integrity of the form and design of Special Streets and Places, particularly those of historic significance should be maintained and protected to the extent feasible and as warranted by safety requirements from unnecessary traffic channelization and from encroachment of new buildings into public space.

The Supreme Court recognizes the importance of parks in the Nation's Capital as venues for special events and First Amendment demonstrations but has stated that special events and demonstrations are subject to reasonable time, manner, and place restrictions. NPS is charged with the responsibility for managing and maintaining the National Parks and is authorized to regulate use of the parks. To this end, NPS has procedures for allowing informal use of open space and permitting of special events or demonstrations. The following rules and regulations apply to the subject site:

- Commercial sales are prohibited except for authorized concessions.
- No demonstrations are allowed within the paved concrete circle at the base of the Monument (36 CFR 7.96 (G)).
- Persons are required to obtain a special permit from NPS to use the Washington Monument Grounds to conduct activities including sporting events, demonstrations, and special events.

Furthermore, the Concessions Policy Act of 1965 (P.L.: 89-249, 79 Stat. 969, 16 U.S.C 20 et seq.) requires that "public accommodations/facilities/services in national park system areas be provided only under carefully controlled safeguards to protect against despoliation." The act also limits development to those areas that are "necessary and appropriate for public use and enjoyment and that are consistent to the highest practicable degree with the preservation and conservation of the areas."

4.4.2 Recreation



The Tidal Basin is a scenic walking area in the vicinity of the Washington Monument.

Open space and its associated natural, scenic, and recreational qualities is a high priority in the District of Columbia. The NPS has jurisdiction over more than 6,400 acres of open space in the District. These parks, trails, rivers, shorelines, and other areas form the heart of the Capital city's open space system, as well as satisfy the recreation needs of its visitors and residents.

NPS Management Policies state that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks. Because many forms of recreation do not require a national park setting, NPS will therefore:

- Provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks
- Defer to local, state, and other Federal agencies; private industry; and nongovernmental organizations to meet the broader spectrum of recreational needs and demands

Washington Monument Grounds

Development of recreation in the District of Columbia was a key part of the national park movement at the beginning of the 20th century. Instead of "rural parks" popular in the 19th century, modern social notions suggested development of a varied, active urban park scheme for Washington. To this end, the McMillan Plan of 1901 reserved the land south and west of the Monument for public enjoyment; formal gardens around the Monument's base would provide respite and a "Washington Common" area to the south would accommodate a stadium, ballpark, open air gymnasium, and playgrounds. Although the McMillan Commission's designs were never fully undertaken, portions of the Monument Grounds hosted baseball diamonds, football fields, tennis courts, and temporary children's playgrounds in the early part of the century. Furthermore, the reclamation of land from the Potomac River added thousands of acres to the park system.

Today, the Washington Monument Grounds constitute the largest open space in the heart of the Nation's Capital. The area is used for a variety of recreational activities, including walking, picnicking, sunbathing, kite-flying, skating, ball playing, and biking. The recreation uses are most

frequent in the spring, summer, and fall. However, the District of Columbia's temperate climate allows some of the recreational uses, such as jogging, to occur year-round.

Nature lovers and picnickers enjoy the open expanses of the Grounds. Hikers and joggers use the various Washington Monument walks as part of their route. Pathways to the base of the Monument do not meet standards for handicapped accessibility. Likewise, the existing concrete jersey barriers around the Monument disrupt access to pathways across the Monument Grounds.

In addition to informal ball games, there are a number of local recreation leagues that play sports, such as softball, kickball, and flag football, primarily on the northeastern and western portions of the Grounds, where the topography is flatter and more suitable for these activities. These leagues are required to obtain a permit from NPS to use the Washington Monument Grounds for any organized recreational use.

The National Mall and Monumental Core

L'Enfant planned the National Mall as a "place of general resort" that would have "public walks," which were defined as tree-lined promenades flanked by public buildings. Today, the 140 acres of the Mall and Washington Monument Grounds function as L'Enfant intended; the large open space areas accommodate the needs of the local population and visitors. Popular recreational activities include soccer, frisbee playing, volleyball, walking, inline skating and bicycling. Bicycles and inline skates are allowed along paved roads and walkways in the park, but are not allowed in the memorial or monument areas. All sidewalks near the Mall and Ellipse are open to bicycle use. Other nearby recreational resources include pedal boats on the Tidal Basin, recreational fields in West Potomac Park, and various nearby trails, as indicated in Table 4.2.2-2.

Table 4.2.2-1
NPS Trails near the Monument Grounds

Trail Name	Length
The Washington Monument Grounds Walks	0.9 miles
The Tidal Basin Shoreline Trail	2 miles
The Mall	1.8 miles
Reflecting Pool Walkways	1 mile
Independence Avenue	0.8 miles
Constitution Avenue	0.9 miles
Potomac Park Shoreline	2.6 miles

Source: NPS – National Capital Region

The *Comprehensive Plan for the National Capital, Federal Elements (1977-1984, updated 1990)* preserves the open space and recreational use of the Mall. The chapter specifies that the Mall should “primarily serve as a formal setting for the Capitol, the White House, the Washington Monument, the Lincoln Memorial, the Jefferson Memorial and the Tidal Basin and should be maintained as a large, landscaped open area. It should also serve the passive/leisure and active recreational needs of Visitors, as well as residents, to the extent that its primary purpose is not compromised.”

4.4.3 Socio-Economic Resources

Socio-economic resources include population and demographic characteristics, housing, community facilities, and economic and fiscal conditions. There are no residential units or private commercial office buildings on the Monument Grounds or within the immediate study area.

4.4.4 Infrastructure

Existing infrastructure at the Washington Monument Grounds includes utilities comprising electric, gas, steam, water, and storm and sanitary sewer lines as well as circulation systems such as walking paths and the 16th Street parking lot. The utilities on the Grounds adequately meet needs at the current level of visitation to the Monument. However, the pathways on the Grounds do not sufficiently meet accessibility requirements. Additional information about the existing stormwater and sanitary sewer lines and circulation infrastructure at the Grounds is presented in further detail within the discussions regarding existing conditions of water resources and transportation.

4.4.5 Transportation

The Washington Monument Grounds are accessible from a regional transportation network that consists of a many modes of transport. An increasing number of visitors are utilizing the Metrorail subway system to access attractions in Washington, particularly in the Monumental Core. The Smithsonian stop adjacent to 11th Street on the Mall is approximately 1,000 feet from the Monument Grounds. Therefore, this section addresses the components of the transportation system that are applicable to the affects of the alternatives, which include pedestrian walkways on the Grounds and the National Mall, and parking.

Pedestrian Access

Walkways on the Grounds provide pedestrian access to the Grounds and the Monument from areas throughout the National Mall.

The Monument Grounds are located at the confluence of several pedestrian routes of the National Mall. These routes provide access to the Ellipse and White House to the north; the Mall and



View of the Monument from a distance.

Smithsonian to the east; the Holocaust Memorial Museum and Bureau of Engraving and Printing to the south; and the Rainbow and Reflecting Pools, the Lincoln Memorial, and Korean War Veterans, Vietnam Veterans and World War II Memorials to the west.



The parking lot on the north side of the Grounds at 16th Street.

Parking

Parking is provided on the Grounds at a parking lot on the north side of the Grounds, which is accessed from Constitution Avenue. The parking lot has 108 parking spaces metered for 2 hours. These spaces are not specifically designated for Washington Monument and Grounds visitors only. Removal of this parking lot was approved by CFA, NCPC, DC SHPO, and ACHP as part of the 1993 DCP.

There are approximately 2,000 parking spaces within walking distance (1,500 feet) of the Washington Monument and its Grounds. Parking is available along Constitution Avenue, along Madison and Jefferson Drives, at the Tidal Basin boat concession, at the Jefferson Memorial, along Ohio Drive and at three parking lots in West Potomac Park. As with the parking lot on the Washington Monument Grounds, parking in the area is not specific to any one memorial and is dispersed to allow parking with pedestrian access to all the area memorials.

CHAPTER 5



ENVIRONMENTAL CONSEQUENCES – ALTERNATIVE A

APRIL 2002

5.1 NATURAL RESOURCES

5.1.1 Geophysical Resources Impacts – Alternative A

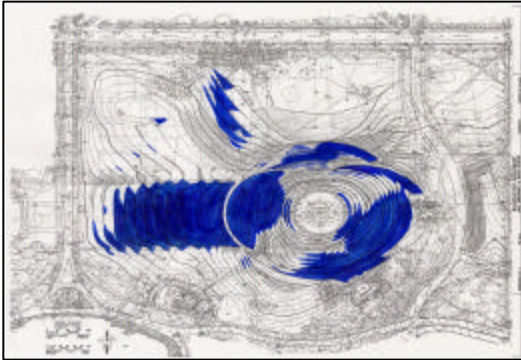
The analysis of potential impacts associated with Alternative A on geophysical resources at the Monument Grounds includes discussion of effects on topography, soils, geology, and groundwater. Information on the known existing characteristics of these geophysical resources was compiled. The locations and configurations of the resources were then compared to the location and configuration of the proposed development and modifications. Predictions about short- and long-term impacts to geophysical resources at the Monument Grounds were based upon previous studies and recommendations regarding engineering of the landform and upon engineering analysis of the proposed improvements plan for the Grounds.

The dispositions of potential impacts identified for geophysical resources at the Washington Monument Grounds were classified in the following categories:

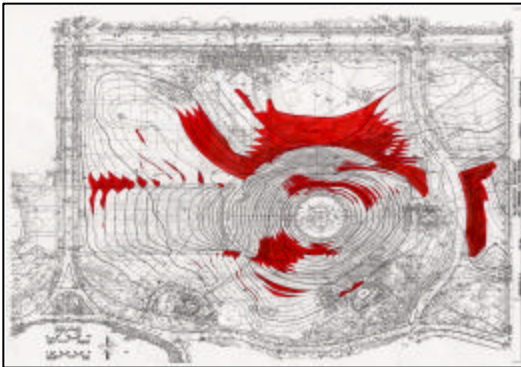
- **No impact** – The proposed development would not affect the geophysical resource.
- **Minor impact** – The proposed development would result in localized and slightly detectable effects, but would not noticeably affect the overall character of the geophysical resource.
- **Moderate impact** – The proposed development would result in clearly detectable effects and would have a noticeable affect on the overall character of the geophysical resource.
- **Major impact** – The proposed development would result in evident effects and would substantially affect the overall character of the geophysical resource.
- **Positive impact** – The proposed development would improve the overall character of the geophysical resource.

Topography Impacts

Alternative A would slightly reshape the mound that provides the substrate for the Washington Monument. Cut and fill operations would be conducted surrounding the Monument to create terraced intermediate portions of the mound where low retaining walls would be installed to



Alternative A Fill Diagram



Alternative A Cut Diagram

function as vehicle security barriers. Additional fill would be added on the mound to the west of the Monument to smooth the irregular existing contours and the existing overall asymmetric nature of the mound would be reshaped to a more uniform appearance. However, a stated objective of the Alternative A is to provide security while retaining the general form of the existing mound. Therefore, the general slopes and contours of the landform would not be substantially altered from the existing condition. Changes in elevation from the perimeter of the Grounds to the Monument plaza would not change and average slopes on the Grounds would still be retained between 3 percent and 8 percent grade as in existing conditions. Overall, Alternative A would result in a minor impact to the topography around the Monument.

Soils Impacts

Based on evaluation of preliminary designs, the estimated proposed fill would comprise a range from trace amounts to a few feet of material added over approximately 13 acres surrounding the Monument (see Alternative A Fill Diagram). Estimated cuts would include a range from trace amounts to a few feet of material removed from approximately 10 acres surrounding the Monument and near the perimeter of the Grounds (see Alternative A Cut Diagram). The soils that would be disturbed by the development are fill soils that were previously added on the Grounds. Cut and fill amounts would be balanced to the extent possible to minimize the need to import or export soils during construction. Additionally, under Alternative A, the cut and fill of soils on the Grounds would be designed to result in no net change in the soil loads surrounding the Monument. To accomplish this, grading operations would substitute soils created at specific densities (through mixture with natural and synthetic materials) for natural soils on the Grounds to the extent that substrate loading is not substantially modified. Overall, implementation of Alternative A would have a minor impact on existing soil conditions at the Monument Grounds.

During construction, temporary impacts to soils from erosion would be minimized by implementation of erosion and sediment control measures as described regarding surface water. The gentle slopes proposed in Alternative A would not likely increase the potential for erosion on the Grounds.

Geology Impacts

As previously discussed, the foundation of the Washington Monument rests upon an incompressible sand and gravel layer that bears upon a layer of compressible wet clay. The presence of this clay layer has historically been of concern due to the theoretical potential for the Monument to settle (evenly or out of plumb) if the clay layer is compressed. Research on the structural condition of the clay substrate under the Monument indicates that potential compression of the clay could be related to three different factors: (1) loading from the Monument foundation, (2) changes in surrounding soil loading, and (3) dewatering of the clay. However, as demonstrated in the following discussion, Alternative A would have a negligible impact on any of the 3 factors related to compression of the clay.

According to past geotechnical reports prepared for the Monument, the clay substrate of the Monument has been, and will continue to be, subject to relatively slow progressive compression over time due to the load of Monument foundation transmitted to the clay layer. Under Alternative A, the proposed visitor access passageway would be constructed through the below-grade wall of the foundation of the Monument to access the elevator shaft of the Monument. Given conservative calculations based on normal-density concrete, the weight of the removed portion of the foundation could be as much as 495 tons. This would be an approximate 0.6 percent reduction of the current 81,120-ton bearing weight on the Monument foundation subgrade. This reduction in load would be temporary during construction and the combined reduction would not occur at one time. The weight of the access structure constructed within the foundation would be designed to replace or compensate for the reduction in load. Therefore, with the implementation of these design criteria, Alternative A would have a negligible effect on the bearing force of the Monument on the clay substrate.

The clay substrate under the Monument could also potentially be subject to compression if regrading operations substantially increased the effective soil loads surrounding the Monument. However, as explained regarding soils, the proposed regrading of the landscape under Alternative A would integrate soil mixes of varying densities to result in no net change in the soils loads around the Monument. Additionally, the installation of structures and the excavation and installation of the underground access passageway to the Monument would be managed so that the approximate preexisting soil load on the substrate of the Monument would remain

essentially the same at localized areas of construction throughout construction. This would be accomplished by balancing the schedule for removal of soils with the installation of structures to retain the same approximate loading on soils during the construction process. The new below-grade structures and fill added on these structures would also be designed to permanently retain the preexisting soil load at the location of the new facilities. Given that plans for Alternative A do not result in a net change to soil loads surrounding the Monument, the load on the Monument substrate would not likely be significantly modified or unbalanced by the construction or operation of the proposed facilities.

Finally, dewatering of the wet clay substrate beneath the Monument could result in compression of the clay as the layer dries out. The foundations for the visitor screening facility and access passageway extend downward to Elev. +3.5 feet above sea level. This is more than 9 feet above the current elevation of the groundwater table recently documented at about Elev. -5.7. Accordingly, no dewatering would be required during the construction or operation of the Alternative A facilities. Therefore, under the proposed design, Alternative A would not affect the groundwater level below the Monument and would not result in additional compression of the clay substrate due to dewatering and drying.

Based on a detailed evaluation of the potential impacts of Alternative A on the three factors related to potential compression of the clay substrate of the Monument, there would be no substantial changes to settlement of the Washington Monument. Overall, Alternative A would be expected to result in minor impacts to the geologic resources at the Washington Monument Grounds.

Groundwater Impacts

The southwestern portion of the Monument Grounds is located adjacent to the Tidal Basin of the Potomac River. Based on the tidal fluctuation of the groundwater noted in earlier studies, it appears that the site groundwater is connected hydrostatically to the Potomac. Engineers have estimated that this relationship equates to potentially unlimited recharge by the Potomac of the water table at the Grounds (Mueser Rutledge 2002).

As previously discussed, the groundwater level on the Monument Grounds has fluctuated over the existence of the Monument. In 1932, the water table was located at about Mean Sea Level. Due to drawdown of the water table, the groundwater level was located between Elev. -11 and Elev. -10 by 1973. However, due to the proximity of the Potomac River, engineers at that time suggested that the long-term average groundwater level at the Grounds would likely restabilize at an elevation several feet below sea level. Engineers also estimated the water table could temporarily peak near sea level under storm conditions (Hartman-Cox).

The current location of the water table at approximately Elev. -5.7 on the Monument Grounds is in accordance with past engineering predictions. In keeping with those predictions, the rise of the water table to near sea level under storm conditions would still be well below the Elev. 3.5 depth of facilities proposed in Alternative A. Therefore, under both standard and exceptional situations, the constructed features of Alternative A would not be expected to affect groundwater at the Monument Grounds. Additionally, since the water table is well above the clay layer at the Grounds, changes in the water table due to projects or occurrences outside of the scope of the proposed project would not likely dewater the clay layer. Given these conditions, the proposed elements of Alternative A would be essentially unrelated to and unaffected by potential future changes in the water table.

Cumulative Geophysical Impacts

Several proposed projects have been identified in the vicinity of the Washington Monument Grounds that could potentially involve temporary dewatering during construction. These projects include the World War II Memorial, the Red Cross Building, and proposed parking facilities under the Ellipse. At the Monument Grounds, the groundwater recharge capacity of the Potomac River would minimize the likelihood of changes in the water table due to projects not located near the Grounds. Of the three identified proposed projects, the locations of the World War II Memorial and the Ellipse are directly adjacent to the Monument Grounds, while the Red Cross Building is located approximately 0.5 miles from the Grounds.

The proposed method of dewatering for the future Ellipse project is not known. Development of the World War II Memorial, as well as a large percentage of future projects developed in Washington DC, will include the installation of slurry walls socketed into bedrock as the shoring

walls for excavations. Slurry walls seal out groundwater from the project site, therefore permanent dewatering at the site is not required. Additionally, dewatering for construction within slurry walls would not affect groundwater levels outside of the walls. Dewatering for other projects that use pervious shoring walls would allow groundwater levels to drop adjacent to the project site, creating a cone of depression in the water table. Given the use of slurry wall technology, there would be a negligible cumulative impact on groundwater.

Mitigation

- In compliance with the Department of Consumer and Regulatory Affairs (DCRA) permitting regulations, and the *1987 Standards for Soil Erosion and Sediment Control*, erosion and sediment control measures will be implemented to avoid or minimize the potential for sedimentation and contamination impacts to surface waters due to development of the proposed project.
- To reduce the potential for erosion, and to accelerate the reestablishment of vegetation, disturbed or denuded areas will be revegetated upon completion of construction operations.
- To further reduce the potential for sedimentation and contamination impacts to surface waters, proposed impervious surface features such as walking paths will be designed to minimize surface area to the extent practicable.
- Extensive and detailed geotechnical investigations and calculations are being undertaken prior to initiation of construction.
- Cut and fill amounts will be balanced to minimize the need for import or export of soil.
- To minimize the potential for compression in the clay substrate of the Monument, the cut and fill of soil will be designed and implemented to result in no substantial net change in soil loads surrounding the Monument.
- Structural additions to the Grounds will be designed to result in no net change in localized soil loads during construction or operation of the facilities.

5.1.2 Water Resource Impacts – Alternative A

Surface Water Impacts

The removal of vegetation and disturbance of soil during construction of Alternative A could temporarily increase the potential for amplified runoff and erosion on the Monument Grounds. However, during the extent of construction, a DCRA-approved erosion and sediment control plan would be implemented to control erosion and decrease the sediment load of runoff. The plan would comply with criteria and principles as established in the *1987 Standards for Soil Erosion and Sediment Control*. Specific control measures implemented would likely include silt fencing, slope stabilization, and storm drain inlet protection.

The introduction of the Monument Lodge addition, the widening of the pathways, and the removal of the 16th Street parking lot would result in no net change in impervious surface at the Monument Grounds. Approximately 15 percent of the site would continue to be covered by impervious surfaces. Therefore, development of Alternative A would not affect the permanent level of surface runoff from the Grounds.

Alternative A would continue permanent stormwater control essentially as it is currently implemented on the Monument Grounds. A portion of stormwater would infiltrate the proposed vegetated Grounds during overland flow while remaining runoff would enter closed drainage and storm sewer systems. To the west of the Monument, stormwater would be conveyed toward the Tidal Basin, where the water would be filtered and released. North of the Monument, separate storm and sanitary sewer lines would be installed to carry stormwater and wastewater to the combined sewer at Constitution Avenue. South and east of the Monument, separate storm and sanitary sewer lines would be installed to carry stormwater and wastewater to the combined sewer at 15th Street. Under existing conditions the combined sewer lines would convey stormwater to the Blue Plains Wastewater Treatment before release to the Potomac. The existing sewer lines would continue to be susceptible to combined sewer overflow as previously discussed. However, the separate storm and sanitary sewer lines installed in Alternative A would allow effective separation of water flows from the Monument Grounds when the District of Columbia replaces the overflow prone combined system with separate storm and sewer lines.

Wetlands Impacts

Analysis of NWI information has indicated that Alternative A would not disturb land that contains wetlands.

Floodplains Impacts

The proposed modification of completely landscaped areas on the Monument Grounds, some of which are within the 100-year floodplain, would not affect land contributing to the productivity of a floodplain ecosystem. The proposed addition of nominal fill volume within the floodplain adjacent to 17th Street could minimally increase the potential for expansion of floodwaters to the north along 17th Street due to loss of flood storage capacity on the Grounds. However, the Alternative A would support the U.S. Army Corps of Engineer's plan for flood control along 17th Street by providing storage on the Grounds for earth to be used in an emergency levee.

Cumulative Water Resource Impacts

Development of Alternative A would not result in adverse effects to the existing condition of surface waters, wetlands, or floodplains in the vicinity of the Monument. Therefore, the project would not contribute to cumulative impacts to these resources. Further, the installation of separate storm and sanitary sewer lines on the eastern portion of the Monument Grounds during development of Alternative A would allow connection into future separate storm and sanitary sewer lines provided by the District of Columbia, thereby increasing the potential to reduce cumulative impacts due to combined sewer overflow in the future.

Mitigation Measures

The same erosion control measures recommended regarding geophysical resources for Alternative A are recommended regarding water resources for Alternative A. Additionally:

- The existing materials storage for the Corps of Engineer's flood control plan will not be disturbed or removed during construction or operation of the proposed development.

5.1.3 Vegetation Impacts –Alternative A

Development of Alternative A would involve disturbance of fill soils and sod on the hill around the Washington Monument due to the construction of the new visitor screening facility and underground passageway and modification of the path system on the Grounds. Preliminary estimates indicate that the project would temporarily disturb about 5 acres of grassland on the Grounds and less than 0.5 acres of wooded area. No habitat of rare or threatened species would be disturbed by the development. The stands of elm and cherry trees, where specimens have been lost due to poor soil conditions and disease, would be protected during construction. Additionally, the large mulberry tree located on the hill to the southwest of the Monument would also be protected and preserved. Under final development of Alternative A, the grassland areas of the Grounds would be revegetated with sod, and trees would be planted resulting in a net gain in planted woodland on the Grounds.

Cumulative Impacts

The cumulative status of vegetation at the National Mall may continue to decline in the future due to decimation by Dutch elm disease. However, as discussed in the preceding discussion, construction of Alternative A would involve protection against damage to elm trees on the Grounds and would increase the total vegetation in the Monument vicinity.

Mitigation

- During construction, heavy equipment will be strictly confined to areas of proposed development to limit the disturbance of vegetation to the minimum necessary to meet project objectives.
- To reduce the potential for erosion, and to accelerate the reestablishment of vegetation, disturbed or denuded areas will be revegetated upon completion of construction operations.

5.1.4 Wildlife and Aquatic Life Impacts – Alternative A

Alternative A would not disturb rare or threatened animal species or critical faunal habitat. The common wildlife species inhabiting the Washington Monument Grounds could be disturbed or displaced by development of Alternative A. However, these animals should be readily able to utilize ample similar habitat located in proximity to the Monument Grounds.

Cumulative Impacts

The common species that utilize the Washington Monument Grounds and similar habitat at or near the National Mall would not experience a substantial net loss of habitat due to implementation of Alternative A.

Mitigation

- During construction, heavy equipment will be strictly confined to areas of proposed development to limit the disturbance of vegetation to the minimum necessary to meet project objectives.
- Revegetation will be utilized as proposed to remedy the disturbance of vegetation related to development of the proposed project and to enhance existing habitat on the Grounds.

5.1.5 Hazardous Materials Impacts – Alternative A

Disturbed Soils

Under Alternative A, existing soils at the Grounds would be disturbed by grading, landscaping, and cut and fill operations associated with construction of the visitor screening facility, underground passageway and permanent vehicle barrier walls around the Monument and the development of improvements to the landscape and pathways on the Grounds. Given the previous use of fill materials on the Grounds, investigations of soil borings were made to the depth of disturbance in areas affected by the site improvements.

During the proposed development of Alternative A, contaminated soils identified within proposed areas of soil cut would be carefully removed, transported, and deeply buried in locations of proposed fill, in accordance with applicable Federal and District of Columbia regulations for handling contaminated materials. Substantial amounts of clean fill soil would be added over contaminated soils to the extent that the potential for exposure to contaminated material in the finished landscape would be eliminated. Excavated soil requiring removal to an offsite remediation and disposal facility would be coordinated with the D.C. Department of Consumer Affairs (DCRA), the DCRA Environmental Regulation Administration, and the Public Space Maintenance Administration (PSMA). Contaminated soil would be properly treated and disposed of in an approved facility in compliance with Federal and District guidelines. Overall, development of Alternative A would provide the opportunity improve potential adverse soil characteristics at the Grounds created by historic filling operations.

Demolition and Construction

Alternative A proposes to modify the existing Monument Lodge, which has the potential to expose past building materials that may contain hazardous materials such as lead-based paint, asbestos, and other materials that may be now identified as hazardous. Potential impacts would include construction worker safety, public exposure, and disposal of hazardous material waste.

Mitigation

Impacts would be reduced to a level below significance by the implementation of appropriate mitigation measures, such as the use of best management practices for identification, collection, transport, treatment, and disposal of hazardous waste encountered.

5.1.6 Air Quality Impacts – Alternative A

The impact of the proposed project on ambient air quality would be primarily associated with construction activities on the Monument Grounds. No additional visitors to the Monument are anticipated due to this project; therefore, there would be no additional motor vehicles and their emissions, except for construction vehicles, and equipment. Secondary impacts of pollutants on the Grounds would be associated with operation of the project's space heating/cooling equipment and facilities maintenance activities.

The Clean Air Act Amendments of 1990 require Federal agencies to ensure that their actions are consistent with the Clean Air Act and with Federally enforceable air quality management plans (e.g., State Implementation Plans). The implementation of this requirement is known as the General Conformity Rule. The conformity assessment process is intended to ensure that Federal agency actions: (1) will not cause or contribute to new violations of NAAQS; (2) will not increase the frequency or severity of any existing violations of ambient air quality standards; and (3) will not delay the timely attainment of ambient air quality standards, which are the same criteria used to assess a significant air quality impact under NEPA.

EPA has determined specific Federal actions, or portions thereof, to be exempt from the General Conformity Rule. Actions are exempt where the total of all reasonably foreseeable direct and indirect emissions (1) would be less than specified emission rate thresholds, known as de minimis limits, and (2) would be less than 10 percent of the area's annual emission budget. The following assessment relies on specific numerical thresholds for individual air pollutant emissions. These thresholds correspond to the de minimis levels contained in the General Conformity Rule. The Washington metropolitan region is currently designated as a Federal "serious" nonattainment area for ozone. The de minimis thresholds applicable to this classification are emission rates of 50 tons per year each for volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), the pollutants that are the primary constituents in the formation of ozone.

Construction Impacts

Construction may affect air quality as a result of (1) construction equipment emissions, including trucking to and from the Monument Grounds; (2) fugitive dust from demolition, grading, and

earthmoving; and (3) emissions from vehicles driven to and from the site by construction workers. Emissions produced during construction would vary daily depending on the type of activity.

The specific types of equipment that would be used for demolition, grading, utility, paving, and building construction phases are not known, nor has the construction schedule been defined. Once a construction plan is developed, emissions can be estimated using techniques compiled and published by different air quality management districts, and based on the type of land use and the area of facilities to be built. The standard emission factors to be used for estimating are based on the U.S. Environmental Protection Agency Compilation of Air Pollution Emission Factors (commonly referred to as AP-42). The estimated emissions are predicted to be less than the de minimis thresholds and less than 10 percent of the projected area emissions.

Summary of Impacts

Construction emissions are assumed to be less than the de minimis thresholds. Therefore, it may be presumed that the construction emissions resulting from implementing Alternative A conform with the Metropolitan Washington attainment plan and there would be no significant regional air quality impact.

Mitigation

Two assumptions made in calculation of construction emissions will be included in the contractor specifications:

- Electric power for construction will be provided by available commercial power instead of portable generators wherever feasible.
- Water will be used on active grading areas and unpaved roads to eliminate visible dust plumes.

5.1.7 Noise Level Impacts – Alternative A

The effects of Alternative A on ambient noise levels would be primarily associated with construction activities on the Monument Grounds and the operation of construction vehicle access to and on the Grounds. Construction activities for Alternative A would result in intermittent short-term noise effects for the duration of noise-generating construction activities. The noise produced during construction would vary daily depending on the type of construction activity. The basic construction activities may include demolition, excavation and grading, utility construction, and building construction. Demolition for Alternative A would include the removal of paved areas in the plaza and the 16th Street parking lot and specific Grounds pathways and modifications to the Monument Lodge. Noise would be generated during excavation and grading, and utility and building construction. Noise would be generated by construction equipment during all phases of construction, including the movement of heavy trucks to and from the site, and construction worker commute vehicles.

Construction would be required to comply with District noise control regulations: between 7:00 a.m. and 7:00 p.m., noise generated by construction equipment (not including pile drivers) shall not exceed 80 dB(A) at a distance of 25 feet outside the construction site, and between 7:00 p.m. and 7:00 a.m., noise generated by construction equipment shall not exceed 55 dB(A) at a distance of 25 feet outside the construction site.

The specific types of equipment that would be used for demolition, grading, utility, paving, and building construction phases are not known at this time. Construction activities would normally involve the use of bulldozers and jack hammers during demolition; bulldozers, scrapers, backhoes, and trucks during excavation and grading; backhoes during utility construction; and pile drivers, concrete mixers and pumps, saws, hammers, cranes, and forklifts during building construction. Table 5.1.7 -1 presents typical noise levels for various types of construction equipment.

There are no sensitive noise receptors on the Grounds, as defined in Section 4.1.7. Unless construction would include pile driving near the property line, it is not anticipated that construction noise limits would be exceeded at the property line. Therefore, no adverse impact from construction activities on the site is anticipated.

Table 5.1.7-1
Construction Equipment Noise Levels
Before and After Mitigation (dB(A))

<i>Noise Level at 50 Feet</i>		
Equipment Type	Without Noise Control	With Feasible Noise Control¹
Earthmoving		
Front Loaders	79	75
Backhoes	85	75
Dozers	80	75
Tractors	80	75
Scrapers	88	80
Graders	85	75
Truck	91	75
Pavers	89	80
Materials Handling		
Concrete Mixers	85	75
Concrete Pumps	82	75
Cranes	83	75
Derricks	88	75
Stationary		
Pumps	76	75
Generators	78	75
Compressors	81	75
Impact		
Pile Drivers	101	95
Jack Hammers	88	75
Pneumatic Tools	86	80
Other		
Saws	78	75
Vibrators	76	75

¹ Estimated levels obtainable by selecting quieter procedures or machines and implementing noise control features requiring no major redesign or extreme cost.

Source: U.S. Environmental Protection Agency, 1971

Alternative A activities would include the movement of construction equipment and materials to the development site, the removal of demolished materials from the site, and the commuting of the construction crew to and from the site.

Noise generation from heating, ventilating and air conditioning (HVAC) equipment, vehicles, and facilities maintenance equipment such as lawnmowers is not anticipated to change from the existing noise levels these sources. Therefore, there would be no adverse noise impact.

Mitigation

Best management practices and construction procedures will be implemented during construction of Alternative A to minimize construction noise at the sources as necessary to meet District standards. Noise barriers should be used as necessary to attenuate noise from the construction site. It is recommended that construction specifications require the selection of truck routes that will minimize the potential for truck noise impact during construction.

5.2 CULTURAL RESOURCES

5.2.1 Archaeological Resources Impacts – Alternative A

Alternative A would have no effect on archaeological sites that may be potentially eligible for nomination to the National Register. None of the proposed alterations would be below the stratum of fill that sits on top of the historic circa 1878 grade. Consequently, potential archaeological sites would be located below the project area or outside of the project area bounds.

During implementation of the proposed improvements, debris relating to the Monument's previous construction and/or modification efforts could potentially be encountered. Should resources be encountered during construction, however, activities will stop while appropriate studies are conducted.

5.2.2 Historical Resource Impacts – Alternative A

The NPS has entered into a programmatic agreement with the National Capital Planning Commission, District of Columbia Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) for implementation of the proposed security improvements. This agreement, which is provided in the Appendix, spells out the consultation process as required by Section 106 of the National Historic Preservation Act and Advisory Council regulations (36 CFR Part 800). On February 28, 2002, the District of Columbia Historic Preservation Review Board (HPRB) formally conducted a Section 106 review of the proposed permanent security improvements to the Washington Monument and its Grounds associated with Alternative A. The HPRB voted to adopt the staff report, which recommended that the DC-SHPO continue consultation with the NPS and other parties, supported the proposed modifications to the 1993-modified DCP and supported Alternative A's concept for improvements to the Monument Grounds, including the concept of an addition to the Monument Lodge.

Structural Integrity

The proposed security improvements for the Washington Monument would include construction of a passageway that would penetrate the below-grade exterior wall of the Monument above the foundation. After visitors passed through the new screening facility, they would enter the proposed underground passageway, and proceed through the Monument foundation into the deepened elevator inside the Monument for ascent to the observation platform. The finished dimensions of the interior of the passageway would be about 10 feet wide, 8 feet high, and approximately 200-250 feet long.

In reviewing available data, engineers have concluded that the best information on the ability of the Monument to withstand the construction of the proposed access passageway lies in the recorded behavior of the Monument during the 1879 underpinning and subsequent buttress construction. The most pertinent fact about the previous work is that the original foundation was able to span about 70 square feet of excavation (7 feet by 10 feet) with a minimum of added supports. This was successfully accomplished on all four sides of the Monument during construction of center buttresses after the underpinning. The strength of the original foundation to accommodate extensive excavations into its masonry, while supporting approximately half of the total finished shaft weight, portends well for the more limited, carefully braced construction planned for the proposed passageway.

To minimize the potential for movement in the existing Monument foundation system during construction of the passageway through the foundation wall, engineers have planned a particular sequence of specific techniques for construction. Excavation of a working area to the east extent of the Monument foundation would involve the installation of a soldier-pile cofferdam (retaining wall) set into grout-filled holes drilled to the top of the Monument foundation pad. The cofferdam would be substantially reinforced and the soils excavated from inside of the cofferdam would be distributed to minimize unbalanced loading of underlying soils. A drill rig would be lowered into the area secured by the cofferdam and construction of the passageway through foundation would be completed utilizing drilling equipment and adding stressed steel support ribs, hydraulic jacks and masonry anchors to stabilize excavated areas. The heavily reinforced, four-foot-thick sidewalls of the passageway would be completed first one at a time by progressively excavating a 4-foot wide slot and installing tightly wedged ribs, followed by

casting a reinforced concrete beam in the slot. Hydraulic jacks would be used to transfer the load from the Monument above onto the beam. After both sidewalls were in place, the passageway would be excavated progressively as top and bottom braces were installed to buttress the Monument foundation against the potential for lateral and vertical movement. To further ensure the stability of the Monument, a sensitive motion monitoring system would be installed on the foundation and examined daily.

Other Historical Resources

Alternative A would also involve positive impacts due to the removal of the temporary structures that currently exist at the base of the Monument. In addition, because high quality pavers would be used to replace the asphalt, there would be a positive impact on that element.

Alternative A's proposed system of walls and berms is consistent with the approved DCP and with other historical proposals for landscape treatments of the Grounds. After the Monument's dedication in 1885, terraces and ornamental retaining walls were proposed but abandoned in favor of the simpler grassy mound landscape that exists today. Over the years, elaborate proposals for the Grounds have been suggested. While none of these proposals were fully developed, the concept of a more complete, symmetrical landscape treatment has been included in various development plans for the Grounds. Therefore, the terracing and walkway systems proposed under Alternative A would be compatible with the history of development plans for the landscape of this historic resource.

Alternative A would result in a positive impact on the historic Monument Lodge by rehabilitating and adaptively using it as the entrance portal to the underground visitor screening facility and passageway to the Monument. This would be a positive impact because it would remove the 1960's cinderblock lean-to and aluminum awning additions that detract from the historic structure. The use of the Lodge as a facility for visitors would also be a positive impact because it would give a suitably distinguished function to the historic structure. However, Alternative A's installation of the proposed stair addition on the west side could affect the physical integrity of the structure. The building addition must be installed in a manner that allows it to be reversible with minimum damage to the historic fabric of the structure.

Alternative A would retain and enhance the landscape elements and features that are contributing resources to the landscape. As presented in greater detail in Section 5.2.4, the historically important views of the cultural landscape would be maintained and enhanced. The view from the Ellipse to the Jefferson Memorial would be enhanced by the removal of the 16th Street Parking lot, the view of the greensward from West Potomac Park would not be impacted due to use of earthen berms to shield the visibility of the wall, and views from the National Mall would be unchanged. In addition, the flagpoles would be retained, the removal of the 16th Street parking lot allow completion of the German-American Friendship Garden, and regrading of the topography would create a more symmetrically shaped mound around the Monument while maintaining the informal open space setting of the Grounds.

In general, Alternative A's restrained design is sensitive to the simplicity of the Monument Grounds. Although it proposes a minor change to the landscape, the change would preserve the openness and restore some of the original design intent to the Grounds. Alternative A would situate the Monument firmly in its landscape, drawing together the obelisk, the mound, the other structures, and the open lawn areas into a total composition. Overall, Alternative A respects and enhances the landscape and setting of the Monument and Grounds.

Mitigation

- Pursuant to a Programmatic Agreement, the NPS will continue to consult with the District of Columbia Historic Preservation Office (DC-SHPO), ACHP, NCPC, and concurring parties to ensure that the undertaking will meet the Secretary of Interior's Standards for Rehabilitating Historic Structures and Cultural Landscapes.
- NPS will continue engineering analysis to ensure that excavation and construction through the foundation will be conducted without harm to the Monument's integrity.
- The additions to the Monument Lodge will be installed in a manner that allows it to be reversible with minimum damage to the historic fabric of the structure.
- Rehabilitation of the Monument Lodge will be achieved in accordance with the Secretary of the Interior's Standards.
- Ground surfaces and planting materials will be of the highest quality and appropriate to the historic precedents.

5.2.3 Cultural and Ethnographic Resource Impacts – Alternative A

The November 2001 *Program Requirements for the Washington Monument Permanent Security Improvements* cite “Preservation of Cultural Landscape Quality” as a primary objective in the design. Therefore, consideration of this factor is important in evaluating both build alternatives and the No Action Alternative.

Alternative A would facilitate and enhance many of the annual cultural events and public gatherings on the Monument Grounds. For example, Alternative A’s proposed retaining walls and earthen berms would provide seating during public events and the proposed improvements would not adversely affect the ball fields, kite festival, or the 4th of July celebration. Alternative A also proposes to reconfigure the walkways to be accessible to all pedestrians. This reconfiguration would create a positive impact by making cultural gatherings and events open and accessible to more people. Furthermore, Alternative A would remove the temporary structure on the Monument’s eastern side. This would create a larger plaza composed of high quality materials.

Alternative A’s proposal to build an underground visitor screening facility and passageway would help preserve the cultural landscape quality of the Monument Grounds while providing necessary improvements. There would be no cumulative impacts on cultural and ethnographic resources under Alternative A.

5.2.4 Visual Resource Impacts – Alternative A

Methodology

This visual impact assessment addresses potential changes to views and vistas that can be attributed to the proposed action. This analysis is based in large part on computer-generated photo simulations of the improvements as proposed under Alternatives A, B, and C. These simulations represent views toward the Monument from public viewpoints in surrounding visual character areas and were selected based on the potential to maintain the integrity of the site from the selected viewpoints.

Views of the Washington Monument were photographed using a 50-millimeter lens, which most closely approximates the human eye, on a 35 mm Single Lens Reflex (SLR) camera. These photographs were then used for further analysis employing computerized visual simulation techniques. Computer-aided design drawing (CADD) models of the landscapes proposed in Alternatives A, B, and C were developed based on information provided by the project landscape architects and engineers. The computer models were developed as “wire-frame” diagrams of the building that were rectified to the existing site elevation and topography matching the site locations in the photographs. These models were then imported into a computer drawing program and overlaid on the digitally scanned photographs taken from each of the four viewpoints. The final product provides an accurate representation of the location, scale, and mass of the proposed designs superimposed on each photograph.

Impacts to views and vistas are determined based on an analysis of the existing quality of the landscape in view, the sensitivity of the view (such as important views from historic and cultural sites) and the anticipated relationship of the proposed design elements to the existing visual environment.



Visual simulation viewpoints for
Alternative A

Visual impacts in the analysis presented below are described in the following categories:

- **No visual impact** – The proposed design would not be visible from the representative viewpoint.
- **Minor visual impact** – The proposed design would be visible as a background element of a view. It would not interfere with views from the representative viewpoint and would not change the character of the existing view.
- **Moderate visual impact** – The proposed design would be visible as part of a view that includes elements of similar mass and scale without changing the character of the existing view.
- **Major visual impact** – The proposed design would be visible as a contrasting or dominant element that interferes with views from the representative viewpoint and substantially changes the character of the existing view.
- **Positive visual impact** – The proposed design improves a view or the visual appearance of an area.

Visual Impact on the Grounds

Alternative A proposes the construction of an underground access and screening facility. With this addition, visitor services and queuing would occur out of sight, allowing the Grounds to maintain a more dignified appearance. Walled terraces and pathways would be installed to provide an access control and barrier system. Intended to have little impact on the visual appearance of the Grounds, these structural alterations would allow the gentle slope of the landscape, or grassy mound, to appear smooth and rolling from a distance. As demonstrated by the simulations, however, the proposed walled terraces would have a minor effect on the appearance of the Grounds, especially as one moved closer to the Monument. Overall, as a below-grade option, Alternative A would restore and improve the visual integrity of the Grounds and have a positive impact on visual resources.

Visual Impact on the Plaza

Under Alternative A, the Monument plaza would be improved by the removal of the interior screening building. The visual quality of the plaza would be greatly altered in this instance, but

the impact would be very positive. In addition, the existing plaza pavement would be replaced with higher quality materials in a design that would be sympathetic to the 1888 plaza. As a result, a visitor would be presented with the order and balance of a repetitive paving pattern. The eye would move quickly away from the familiar pattern below to the contrasting simplicity of the Monument above, and then on to the views and vistas of the Monumental Core from the plaza. Overall, the impact of Alternative A on the plaza would be positive.

Visual Impact on Views and Vistas

To preserve the existing views and vistas of the Washington Monument and the Monumental Core, an underground access and screening facility is proposed to be below-grade in Alternative A, as mentioned above. Rather than having bollards or concrete jersey barriers, a series of low walls and terraces would gracefully surround the Monument for protection. Thus, from the top of the grassy mound, vistas outward would be maintained. With the visitor screening facility underground and protective barriers out of sight, the vistas to and from the Monument would not be obstructed by intrusive elements that detract from the viewshed. Overall, Alternative A carefully considers and sensitively addresses the issue of views and vistas to and from the Washington Monument, and the impact would be positive.



Simulation #1 – View from 14th Street and Independence Avenue looking northwest toward the Washington Monument Grounds. The simulation illustrates the regraded mound and a low retaining wall surrounding the Washington Monument. In addition, the concrete jersey barriers have been removed. The simulation does not include the trees that would be added under the landscaping plan.



Simulation #2 – View from 17th Street and Independence Avenue looking northeast towards the Washington Monument. The simulation shows the proposed terraces at the junction of two pathways, and illustrates the continued open character of the Grounds.



Simulation #3 – View from West Potomac Park at 17th Street looking east towards the Washington Monument. The simulation illustrates how the open area to the west of the Monument would be regraded to shield views of the terraces. The simulation also includes the removal of the concrete jersey barriers.



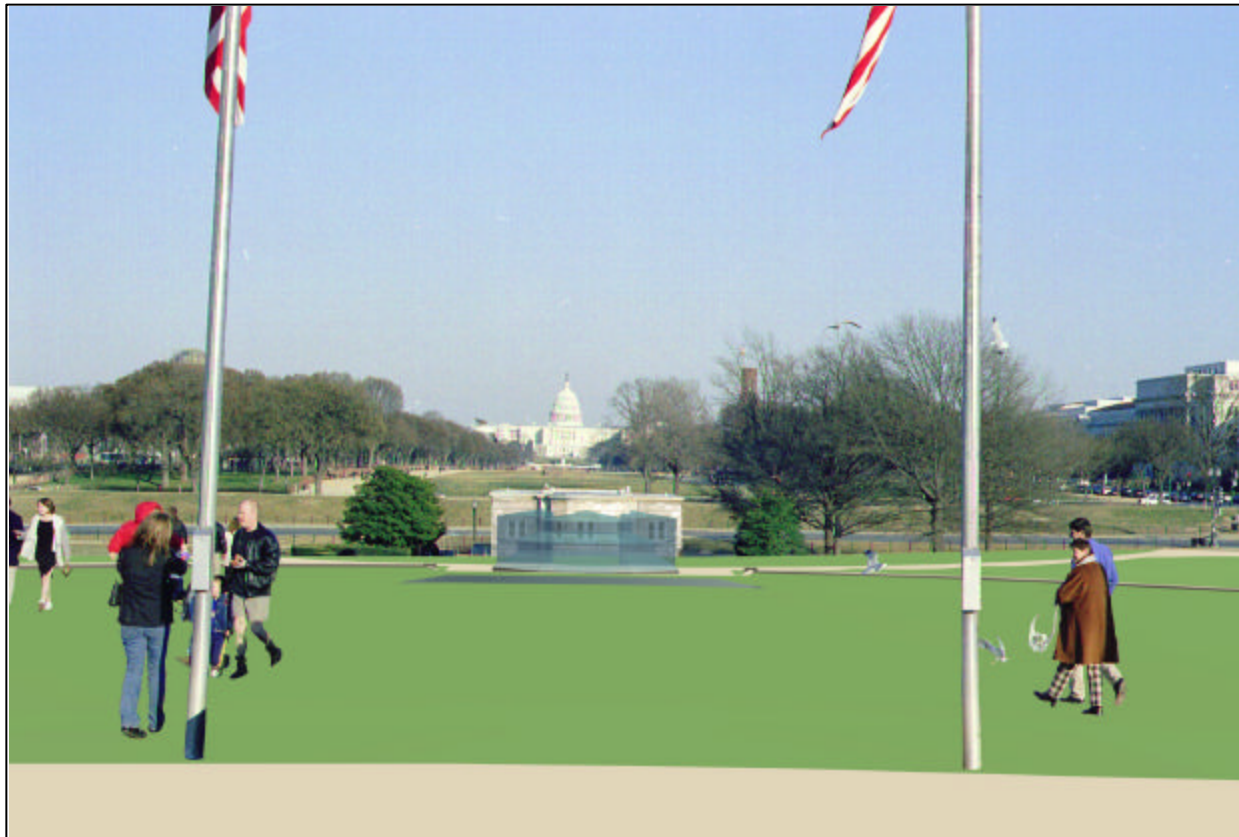
Simulation #4 – View from Constitution Avenue near the 16th Street parking lot looking southeast towards the Washington Monument. The simulation illustrates the removal of the parking lot and completion of the German-American Friendship Garden.



Simulation #5 – View from Milepost 0 Marker on north side of the Ellipse looking south towards the Washington Monument and the Jefferson Memorial. The simulation illustrates the continued open character of the Grounds and the preservation of the north-south vista to the Jefferson Memorial.



Simulation #6 – View from corner of 15th Street and Constitution Avenue looking southwest towards the Washington Monument. The simulation illustrates the regraded mound surrounding the Washington Monument, including the low retaining wall and the removal of the concrete jersey barriers.



Simulation #7 – View from the Washington Monument looking east towards the U.S. Capitol Building and the National Mall. The simulation illustrates the regrading of the landscape, the removal of the concrete jersey barriers, the removal of the additions by the Monument Lodge, and the relocation of the flood light bays from the foreground of the view.



Simulation #8 – View from the National Mall looking west towards the Washington Monument. This simulation illustrates the enhanced east-west axial view from the National Mall. It also shows the regrading of the landscape and the removal of the concrete jersey barriers.

5.3 VISITOR USE AND EXPERIENCE

The purpose of this impact analysis is to determine if proposed security improvements at the Washington Monument are compatible with the desired visitor experience goals at the Monument and surrounding monuments and memorials. To determine visitor experience goals, the two visitor surveys from 1998 (University of Idaho and West Virginia University) and National Capital Parks-Central staff observations concerning visitor attitudes and satisfaction regarding existing visitor experience, interpretation, and educational opportunities at the Monument and surrounding memorials were evaluated. The impacts to visitor use and experience associated with proposed security changes were determined by evaluating the changes against what visitors currently experience while planning for and visiting the Washington Monument.

Certain assumptions were made in conducting the impact analysis. Because the visitor facilities proposed in this alternative are conceptual, it was assumed that the facility would accommodate the number of visitors acquiring Washington Monument tour tickets each morning, that the screening and queuing facilities would be similarly sufficient in size, and that elevator or stairway access into the facility would accommodate the anticipated visitor load. To identify the intensity of visitor use impacts, the following impact thresholds were defined:

Negligible: Little noticeable change in visitor experience or in the defined indicators of visitor satisfaction or behavior.

Minor: Desired visitor experience is changed, but without appreciably limiting or enhancing critical characteristics of the experience. Visitor satisfaction would remain stable.

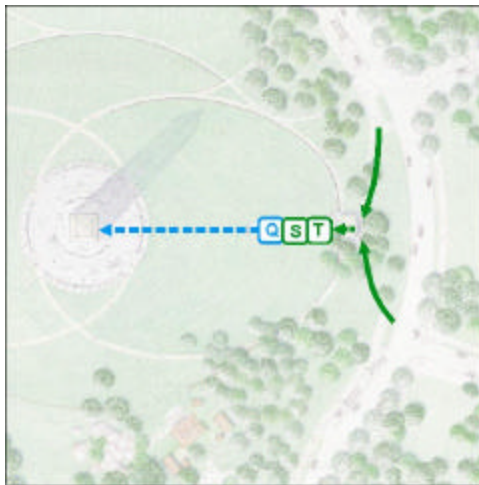
Moderate: Critical characteristics of the desired experience are changed or the number of participants engaging in an activity is altered. Visitor satisfaction would begin to decline.

Major: Security changes would contribute substantially to the elimination of or detract from the desired visitor experience of the Washington Monument. Visitor uses and/or visitor satisfaction would decline substantially over the long term.

Positive: Improvements would contribute to the enhancement of the visitor experience, either by the removing of structured elements that currently detract from the visitor experience, or by introducing new features of amenities.

5.3.1 Visitation Patterns Impacts – Alternative A

Visitation to the Washington Monument cannot increase beyond current levels because of the existing elevator capacity. The new visitor screening facility is designed to accommodate the current number of visitors that do not obtain their timed tickets before coming to the Washington Monument. It is expected that the percentage of visitors obtaining tickets through an advanced reservation system, including via the internet, will continue to increase.



Alternative A Site Access Diagram

In the long term, the physical capacity restrictions of the Washington Monument itself would continue to limit the number of visitors that would experience the interior of the Monument and the view from the Monument's observation level. Because the capacity of the Monument elevator and the available space on the observation level at the Monument are limited, a new visitor screening facility itself would not increase the number of visitors that tour the Monument. However, the facility would provide educational and interpretative exhibits and a unique view of the Monument from below ground. It could accommodate visitors who do not intend to ascend the Monument, or who are unable to acquire a tour ticket.

5.3.2 Visitor Experience Impacts – Alternative A

Access and Orientation

The new underground screening facility would visually improve the approach to the Monument by removing detracting elements. It would not affect the ability of visitors to walk up to the exterior of the Monument and physically touch the structure. It would, however, alter how visitors access the interior of the Washington Monument. The relocation of above-grade functions that are currently visible, such as ticketing or queuing, into an underground facility could result in some temporary minor disorientation as visitors adapt to the location of the new facility. However, the central and visually prominent location of the Monument Lodge on the east-west axis of the National Mall, the presence of signs and NPS personnel on the surface to direct visitors to the new underground facility and provide site information, would mitigate potential visitor confusion. In the long run, the Monument Lodge would serve as an identifiable focal point for all Monument services. As noted in both visitor studies conducted in 1998, personal contact with NPS staff is preferred by visitors and improves their experience.

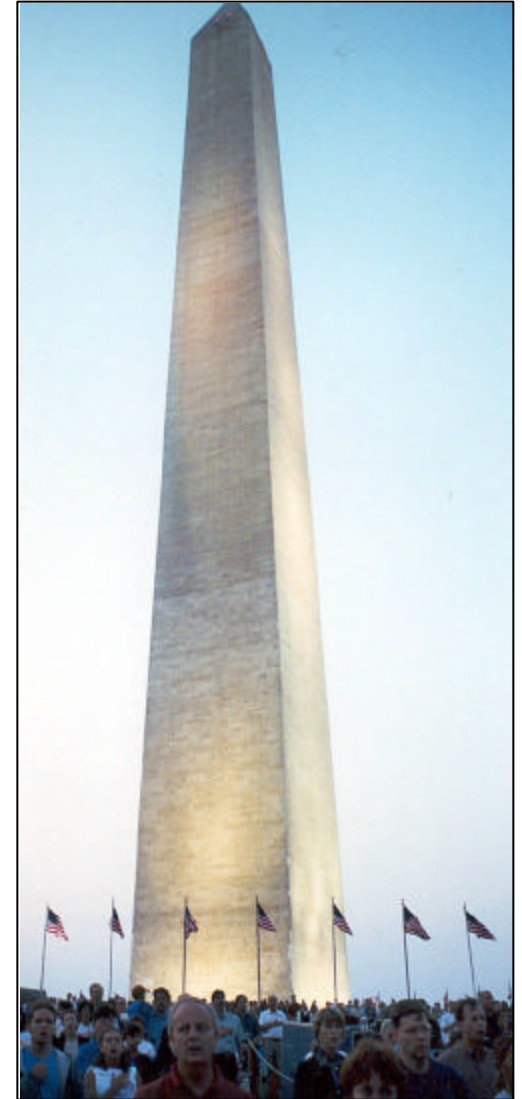
The elliptical paths leading to the Washington Monument would meet accessibility standards for disabled visitors; this would provide a moderate positive impact. The gradual rise in elevation along the path to the Monument would be easier to negotiate than current paths. However, the circular nature of the paths would not always provide the most direct paved route to the Washington Monument for visitors when they arrive on the Monument Grounds; this would result in a minor adverse impact for some visitors, although the visitors would still be permitted to walk across the grass to the Monument.

Because tours would be organized and managed from the underground screening facility, official vehicles such as trash trucks and security personnel vehicles would not be parked on the Monument Grounds except in an emergency or during maintenance activities. The removal of these vehicles and the concrete jersey barriers from the area surrounding the Monument Plaza would provide a positive impact to visitors as they approached the Monument because of the improved view and improved pedestrian circulation that would result.

Washington Monument Tour

The addition of an underground visitor screening facility would not change the essential components of ascending the Monument, but it would alter how the visitor prepares for the tour. Specifically, the proposed addition would relocate the ticketing, security screening, and tour queuing areas, and would provide them in improved facilities.

The process of acquiring a ticket for ascending the Monument would remain the same. Visitors could continue to acquire their tickets in advance via the reservation system or acquire their ticket on a first-come, first-served basis the morning of their desired tour date. On-site ticketing would be available in the underground screening facility. Visitors would enter the Monument Lodge and take stairs or an elevator to the ticketing area of the underground facility. The facility would be as visible to visitors as the current ticket kiosk; and it would be located directly on the central east-west axis of the Mall, thus providing an architectural cue signaling the location of the entrance. It would also provide protection from inclement weather. Overall, impacts to visitors during the ticketing process would be negligible and visitor comfort would substantially improve, particularly if signs and NPS staff were available to educate visitors about the new facility and the ticketing process.





Once ticketed, visitors could leave and return to the facility just prior to their tour time if they had other attractions to visit or they could proceed to the screening area. After being individually screened, using x-ray machines and magnetometers, visitors would be free to enjoy the educational and interpretive exhibit area, the bookstore, or use the restrooms. The new exhibits would provide visitors with the opportunity to learn more about George Washington, the city of Washington, DC, and the history of the Monument. For visitors unable to acquire a ticket to ascend the Monument, the exhibits would display information that is currently only available on the interior of the Monument. These new opportunities would be a positive improvement to a visitor's experience.

Approximately 30 minutes prior to a visitor's designated tour time, the visitors would begin queuing to enter the Monument itself. Groups of 20 to 25 visitors would be ushered into a small staging area where a Ranger would provide information and stories that would prepare the visitors for their tour. From this area, visitors would be led through an underground passageway to the elevator in the lower level of the Washington Monument.

Relocation of the tour queuing and visitor screening, as well as access to the Monument into the proposed underground facility would slightly alter a visitor's experience of the Monument. Whether this change is beneficial or adverse depends upon each visitor's perceptions or desired experience, but would most likely result in a moderately beneficial change in individual visitor experience. Visitors intending to ascend the Monument would no longer be required to wait on the Monument plaza while waiting in lines for tours. For persons who value viewing the context of the Monument, waiting underground could be an adverse impact. However, for all visitors to the Monument Grounds, their trip to the Monument would be significantly enhanced due to the removal of the concrete jersey barriers and the interim screening facility on the plaza. In addition, visitors would be protected from the heat and humidity in the summer and inclement weather throughout the year as they wait in the underground facility, and the opportunity for additional education and interpretation prior to entering the Monument would provide further benefits.

Accessing the Monument underground would also be viewed with a range of emotion or perception. Because most tour visitors are anxious to experience the view from the top of the Monument, view the commemorative stones, and learn about the Monument, accessing the

Monument from underground would not alter that intrinsic experience. Additionally, visitors would continue to have the opportunity to exit the Monument at grade, walk around the base of the Monument and the paths, and view the Monument in the context of the National Mall. Although underground facilities would change the experience, overall adverse impacts to the visitor experience from the underground screening facility and passageway would be minor.

Once visitors entered the Washington Monument, the tour of the Monument would be conducted as it is today. The ascent to the top would take approximately 70 seconds. Visitors would have the opportunity to view Washington from the windows in the observation level and to view the exhibits on the floor below. They would take the elevator back down, viewing the commemorative stones on the way, to the first floor of the Monument (at grade).

They would not be allowed to return to the underground passageway and visitor screening facility via the elevator, but would exit the east side of the Monument onto the Monument plaza. They would experience an improved axial vista of the U.S. Capitol. Strollers left behind in a non-secured area of the visitor screening facility would have to be retrieved by returning to the visitor facility via the paths circling the Monument. This circular return would result in minor negative impacts to visitors who must leave behind items during security screening.

5.3.3 Resource Interpretation Impacts – Alternative A

The features most often enjoyed by Monument visitors would not be affected by the underground screening facility. Visitors with tour tickets would still be able to view Washington, DC from the top of the Washington Monument and they would continue to view the restored commemorative stones on the interior of the Monument as they descend from the Monument's top floor.

The screening facility would provide new educational and interpretive exhibit and program space that would greatly enhance the existing visitor experience. One of the greatest limitations within the Washington Monument from a visitor experience perspective has been the limited time and physical space available for quality education and interpretation programs. The 70 seconds during the ascent to the Monument top and the several minutes on the return trip do not provide ample time to present much information to help visitors understand and connect with the Washington Monument. With the addition of new educational and interpretive space, tour

visitors would have the opportunity to learn about George Washington's life and contributions to the country, the Monument's history, and the role of the Monument in the landscape of the Federal City while waiting for their tours. Educational and interpretive exhibits in the ticketing area and lobby, as well as the underground view of the Monument, would also provide added benefits for those visitors unable to acquire a tour ticket and would provide a replacement experience during times when the Monument closes for maintenance or other needs. These additional educational and interpretive functions would substantially improve the visitor experience.

Cumulative Impacts

Existing tours and educational and interpretive opportunities would continue to be available at museums, memorials, and other NPS sites in the vicinity of the Washington Monument. These opportunities would continue to enhance the experience of visitors to Washington by providing additional information on the historic city and the Nation's most important commemorative resources. The enhanced visitor experience at the Washington Monument, in combination with other tour experiences, would increase visitor knowledge about the history of the nation and the important figures in creating that history.

Overall, the underground screening facility and the landscape security improvements associated with Alternative A would enhance the visitor experience at the Washington Monument and its Grounds. The number of visitors able to tour the Washington Monument itself would continue to be limited by the capacity of the elevator ascending to the observation level. The intrinsic qualities of the tour would remain the same. All visitors would continue to have access throughout the Grounds and to the base of the Monument via proposed pathways or across the grassy landscape. Relocation of major components of the tour process, such as tour queuing and security screening, could alter the visitor experience depending upon individual perspective and needs. However, the potential adverse impacts such as the underground access to the Monument would be mitigated by the added benefits of new facilities, protection from the elements, added interpretive functions, and improved visual experience. Overall, Alternative A would result in a major improvement to the visitor experience for a large number of visitors.

5.4 SOCIO-ECONOMIC ENVIRONMENT

5.4.1 Land Use Impacts – Alternative A

As the largest open space in the heart of the Nation's Capital, the Washington Monument Grounds are an important recreational and natural resource for the city. Therefore, it is important that the alternatives respect and enhance the existing land uses of the site.

Under Alternative A, the Monument Grounds would retain their general land use and context as an open space used for ceremonial, recreational, educational, and cultural functions. Activities on the Monument Grounds would continue to be conducted pursuant to NPS permitting procedures and requirements. In addition, the Survey Lodge and the Sylvan Theatre would be retained for their original administrative and cultural land uses. However, the Alternative A proposes to adaptively use the Monument Lodge, remove an existing unsympathetic addition, and add an extension to its western side. In addition, this alternative would remove the 16th Street parking lot to the north of the Monument. This removal would create a positive impact by allowing the German-American Friendship Garden to be completed consistent with its original design intent and use. Overall, Alternative A would have a positive impact on the current land use of the site and the study area.

Plans and Policies

Alternative A would be consistent with the *Comprehensive Plan for the National Capital, Federal Elements* (1977-1984, updated 1990). With respect to the *Parks, Open Space and Natural Features* element and the *Preservation and Historic Features* element, Alternative A would comply with the following policies:

- The integrity of the Monumental Core as a setting to enhance public buildings and monuments would be retained. Additionally, the landscape would continue to serve as an outdoor area for cultural and recreational activities.
- The proposed new construction would be compatible with the historic architectural character and cultural heritage of the historic structure in its design, height, proportion, mass, configuration, building materials, texture, color, and location, particularly in the immediate vicinity of the Monument.

- A landscape solution need for a vehicle barrier system would protect and enhance the distinguishing qualities and character of the Historic Landscape.
- Adaptive reuse the Monument Lodge for a visitor facility would provide for the continued, appropriate use of the Historic Property.

Alternative A also would not affect NPS regulations about sales, concessions, and permitting.

5.4.2 Recreation Impacts – Alternative A

Alternative A proposes a vehicle barrier system of walled terraces and berms. During re-grading of the Grounds, some passive or casual recreational activities near the Monument would be temporarily disrupted. However, the majority of active recreation uses, such as ball playing, occur on the outer areas of the Grounds. Therefore, the terrace system would not have an adverse long-term effect on recreational activities. Although the walls and berms would partially alter access across portions of the site, the current use of the Grounds for recreation would not be affected by Alternative A.

The reconfigured walkways and the removal of existing concrete jersey barriers would have a positive impact on the recreational patterns of walkers and joggers who currently use the walkways. The reconfigured walkways would be accessible to all pedestrians, thereby extending recreational opportunities to more people, and would benefit walkers and joggers who prefer paths with long, gradual curves instead of steep slopes.

5.4.3 Socio-Economic Resource Impacts – Alternative A

Socio-economic resources, including population and economic conditions, are generally affected by a proposed action when there are residential or commercial/retail uses on or in the immediate vicinity of the site. Since there is no housing located within or adjacent to the study area, there would not be any measurable impacts to housing, community services, social conditions, or population. Likewise, since there is no commercial/retail space within or adjacent to the study area, there would be no measurable impacts to economic resources.

5.4.4 Infrastructure Impacts – Alternative A

The development of Alternative A would result in minor impacts to infrastructure at the Monument Grounds. More specifically, the project would result in positive impacts to pedestrian infrastructure at the Grounds and minimal impacts to parking, as discussed regarding the impacts of Alternative A on transportation. The stormwater infrastructure at the Grounds would not be substantially affected by development of the project, as discussed regarding the impacts of Alternative A on water resources. Other utility infrastructure at the Grounds would also not be substantially affected by development of Alternative A. As discussed regarding the impacts of Alternative A on visitor use and experience, development of the Alternative A would not result in increased visitation to the Monument. Therefore, demand upon the electric, gas, water, and sanitary sewer lines at the Grounds would not increase due to Alternative A. In fact, relative to a above ground facility, the location of the screening facility underground would improve the efficiency of the utility systems. Design and configuration of the utility lines at the Grounds in response to the orientation of new facilities in Alternative A would be the responsibility of the utility service providers.

5.4.5 Transportation Impacts – Alternative A

Walkways

The Grounds walkways would be modified in accordance with the proposed grading, landscape, and vehicle barrier system. The system of elliptical-shaped pathways and associated terraces would guide pedestrian movement across the Monument Grounds. In addition, the walkways would improve accessibility in terms of reducing existing steep slopes, thereby, creating a positive impact for access by visitors with disabilities.

Parking

Alternative A would eliminate the parking lot located on the north side of the Grounds, accessed by Constitution Avenue. The lot provides 108 parking spaces; however, these spaces are not only dedicated to visitors of the Monument and its Grounds. This parking lot, as with other parking areas on or near the Mall, are part of a parking plan that allows visitors to access several monuments from one of the parking areas without moving their vehicle. Accommodating access to the Monumental Core of the Nation's Capital is part of an ongoing NPS transportation study, investigating alternatives for a vehicular transportation system.

CHAPTER 6



ENVIRONMENTAL CONSEQUENCES – ALTERNATIVE B

6.1 NATURAL RESOURCES

6.1.1 Geophysical Resources Impacts - Alternative B

Analysis of the impacts of Alternative B on geophysical resources at the Monument Grounds was prepared in the same manner as the evaluation of geophysical impacts of Alternative A.

Topography Impacts

The bollards, visitor services and screening facilities, and access corridor proposed in Alternative B would be built at the existing grade of the Grounds. Therefore, Alternative B would likely result in no substantial impacts to the topography of the Monument Grounds.

Soils Impacts

Surface soils in the vicinity of the proposed bollards, visitor facilities, and secured access path would be disturbed during construction. Additionally soil would need to be removed for the continuous underground footing to support each bollard. No substantive cut or fill of soils would be required for the proposed on-grade construction of Alternative B. To minimize the potential for temporary erosion impacts to soils during construction, erosion and sediment control measures would be implemented as described regarding surface water for Alternative B. Overall, implementation of Alternative B would result in minor impacts to existing fill soils previously introduced to the Monument Grounds.

Geology and Groundwater Impacts

In Alternative B, the Monument would continue to bear directly upon incompressible sand and gravel immediately below the foundation and thus indirectly upon a layer of compressible wet clay below the sand and gravel. As described for Alternative A, potential compression of this clay layer is of concern to the development of the Monument Grounds. Three factors that could potentially result in compression of the clay include the continuing slow settlement of the Monument, a modification of the loading on the clay layer, or substantial change in the water

table. As described in the following discussion, Alternative B would not be expected to affect these factors regarding clay compression.

The bearing weight of the Monument would be minimally increased by development of Alternative B. The weight of the planting bed and seat wall proposed around the base of the Monument would create a slight additional force upon the foundation of the Monument. The total additional weight of these features could be approximately 995 tons under conditions where the soils were completely saturated. This weight would be an approximate 1.2 percent addition to the existing 81,120-ton total bearing weight on the Monument foundation.

The soil load distribution surrounding the Monument would be negligibly affected by the development of Alternative B. The weight of the new visitor facilities and bollards proposed on the Grounds would be negligible in comparison to the total existing soil load on the Grounds surrounding the Monument and would be outside of the critical bearing area with regard to the Monument foundation. The permanent slight addition of differential loads due to Alternative B would not be expected to alter compression of underlying soils.

Finally, soil disturbance for the footings of the new visitor facilities would extend downward to approximately Elev. 15. This would be about 20.7 feet above the current elevation of the groundwater table at Elev. -5.7. Accordingly, no dewatering is proposed during the construction or operation of the Alternative B facilities. Therefore, the development of Alternative B would not affect the groundwater level below the Monument and would not result in additional compression of the clay substrate due to dewatering and drying.

Overall, Alternative B would result in minor impacts to the geologic resources at the Washington Monument Grounds.

Groundwater Impacts

As discussed regarding geology, development of Alternative B would not encroach upon the water table on the Grounds and would not require dewatering. Therefore, the constructed features of Alternative B would not be expected to affect groundwater at the Monument Grounds. Additionally, since the existing water table is well above the clay layer at the Grounds, changes in the groundwater level due to projects or factors outside of the scope of Alternative B would not be expected to dewater the clay layer. Under these conditions, construction and operation of Alternative B would be essentially unrelated to the water table at the Grounds.

Cumulative Geophysical Impacts

Cumulative impacts under development of Alternative B would be the same as those discussed regarding Alternative A.

Mitigation

The same mitigation measures recommended regarding geophysical resources for Alternative A are recommended for Alternative B.

6.1.2 Water Resources - Alternative B

Surface Water Impacts

The removal of vegetation and disturbance of soil during construction of Alternative B could temporarily increase the potential for amplified runoff and erosion on the Monument Grounds. However, as stated for Alternative A, the implementation of a DCRA-approved erosion and sediment control plan minimize these impacts in compliance with the “1987 Standards for Soil Erosion and Sediment Control.”

The addition of the above-grade visitor screening facility, the introduction of the double-fenced security pathway, and the removal of the 16th Street parking lot would result in a no net change in the amount of impervious surface on the Monument Grounds. Therefore, Alternative B would not affect the permanent level of surface water runoff from the Grounds.

Alternative B would continue permanent stormwater control essentially as it is currently implemented on the Monument Grounds. As in Alternative A, existing combined storm and sanitary sewer lines on the Grounds would be separated. North of the Monument, separate storm and sanitary sewer lines would be installed to carry stormwater and wastewater to the combined sewer at Constitution Avenue. South and east of the Monument, separate storm and sanitary sewer lines would be installed to carry stormwater and wastewater to the combined sewer at 15th Street.

Wetlands Impacts

As stated for Alternative A, development of Alternative B at the Monument Grounds would not disturb land-containing wetlands.

Floodplains Impacts

The proposed disturbance of landscaped areas within the 100-year floodplain, for the installation of bollards at the Grounds perimeter, would be minimal and would not affect land contributing to the productivity of a floodplain ecosystem. Alternative B would have a major impact on the U.S.

Army Corps of Engineer's plan for flood control. Alternative B would include a physical barrier along 17th Street that would be an obstacle to easy access to the earth stored on the Grounds for construction of an emergency levee.

Cumulative Water Resources Impacts

Development of Alternative B would not result in adverse effects to the existing condition of surface waters, wetlands, or floodplains in the vicinity of the Monument. Therefore, the project would not contribute to cumulative impacts to these resources.

Mitigation

The same mitigation measures recommended regarding water resources for Alternative A are recommended for Alternative B. Additional mitigation recommended for Alternative B includes the following measures.

- When practicable, storm and sanitary sewer lines on the Monument Grounds will be separated into two distinct closed systems to allow for eventual connection into separate storm and sanitary sewer lines provided by the District of Columbia.

6.1.3 Vegetation Impacts – Alternative B

Development of Alternative B would involve moderate disturbance of grassland and trees around the Monument for construction of the new visitor facilities, modification of paths, and the introduction of the new double-fenced security pathway. Construction for Alternative B would also include excavation along the 1¼ mile perimeter of the Grounds for installation of a continuous footer to support the 1,600 security bollards. These operations would temporarily disturb approximately 1 acre of total grassland and approximately 2 acres of total land within the drip line of the woodland landscape at the Grounds perimeter. This excavation within the drip line would have a major impact on the root system of the trees along Constitution and Independence Avenues where trees line both sides of the sidewalks along the perimeter of the Grounds.

No habitat of rare or threatened species would be disturbed by the development. As described for Alternative A, to the extent possible, vulnerable elm and cherry trees on the Grounds would be protected during development, as would the mulberry tree to the southwest of the Monument. Alternative B would include revegetation of disturbed grassland on the Grounds with sod. Trees would also be planted, as needed, to achieve no net loss of planted woodland due to the project.

Cumulative Impacts

The cumulative status of vegetation at the National Mall may continue to decline in the future due to the spread of Dutch elm disease. However, as explained in the preceding discussion, construction of Alternative B would involve some damage to elms on the Grounds. Damage to the root system of the elms as a result of the construction of the bollard footer would leave them more susceptible to Dutch elm disease.

Mitigation

In addition to the same mitigation measures recommended regarding vegetation for Alternative A, special measures for the elm trees affected by foundation work in Alternative B will be undertaken.

6.1.4 Wildlife and Aquatic Life Impacts – Alternative B

Alternative B would not disturb rare or threatened animal species or critical faunal habitat. The common wildlife species inhabiting the Washington Monument Grounds could be disturbed or displaced by development of Alternative B. However, these animals should be readily able to utilize ample similar habitat located in proximity to the Monument Grounds.

Cumulative Impacts

The common species that utilize the Washington Monument Grounds and similar habitat at or near the National Mall would not experience a substantial net loss of habitat due to implementation of the Alternative B.

Mitigation

The same mitigation measures recommended regarding wildlife and aquatic life for Alternative A are recommended for Alternative B.

6.1.5 Hazardous Materials Impacts – Alternative B

Disturbed Soils

Under Alternative B, existing soils at the Grounds would be disturbed by grading, landscaping, and cut and fill activities associated with the proposed landscape improvements, construction of the visitor screening, improvements to pathways, the construction of the double-fenced security pathway, and the installation of perimeter security bollards with a continual underground footer. Given the previous use of fill materials on the Grounds, soil borings were made to the depth of disturbance in areas affected by the proposed site improvements.

During the proposed development of Alternative B, contaminated soils identified within proposed areas of soil cut would be carefully removed, transported, and deeply buried in locations of proposed fill, in accordance with applicable Federal and District of Columbia regulations for handling contaminated materials. Substantial amounts of clean fill soil would be

added over contaminated soils to the extent that the potential for exposure to contaminated material in the finished landscape would be eliminated. Excavated soil requiring removal to an offsite remediation and disposal facility would be coordinated with the D.C. Department of Consumer Affairs (DCRA), the DCRA Environmental Regulation Administration, and the Public Space Maintenance Administration (PSMA). Contaminated soil would be properly treated and disposed of in an approved facility in compliance with Federal and District guidelines. Overall, development of Alternative B would provide the opportunity improve potential adverse soil characteristics at the Grounds created by historic filling operations.

Demolition and Construction

Alternative B proposes to modify the existing structures at the Sylvan Theatre, which has the potential to expose past building materials that may contain materials such as lead-based paint, asbestos, and other materials that are now identified as hazardous. Potential impacts would include construction worker safety, public exposure, and disposal of hazardous material waste.

Mitigation

Impacts would be reduced to a level below significance by the implementation of appropriate mitigation measures, such as the use of best management practices for identification, collection, transport, treatment, and disposal of hazardous waste encountered.

6.1.5 Air Quality Impacts – Alternative B

The impact of Alternative B on ambient air quality would be primarily associated with construction activities on the Monument Grounds. Alternative B proposes less construction activity than Alternative A; therefore, air emissions would be less. No additional visitors to the Monument are anticipated due to this project; therefore, there would be no additional motor vehicle emissions, except for construction vehicles, construction equipment, and construction workers' personal vehicles, which would be present only for the duration of the construction process. Secondary impacts of pollutants on the Grounds would be the operation of the project's space heating/cooling equipment and facilities maintenance activities.

Construction Impacts

Construction may affect air quality as a result of (1) construction equipment emissions, including trucking to and from the Monument Grounds; (2) fugitive dust from demolition, grading, and earthmoving; and (3) emissions from vehicles driven to and from the site by construction workers. Emissions produced during construction would vary daily depending on the type of activity.

The specific types of equipment that would be used for demolition, grading, utility, paving, and building construction phases are not known, nor has the construction schedule been defined. Emissions can be estimated using techniques compiled and published by different air quality management districts, and based on the type of land use and the area of facilities to be built. The standard emission factors are based on the U.S. Environmental Protection Agency, Compilation of Air Pollution Emission Factors (commonly referred to as AP-42). The estimated emissions for Alternative B are estimated to be less than Alternative A; therefore, the emissions are estimated to be less than the de minimis thresholds and less than 10 percent of the projected area emissions. Therefore, it may be presumed that the construction emissions resulting from implementing Alternative B conform with the Metropolitan Washington attainment plan and there would be no significant regional air quality impact.

Mitigation

Mitigation measures identified for Alternative A, are applicable for Alternative B.

6.1.6 Noise Level Impacts – Alternative B

The effects of Alternative B on ambient noise levels would be primarily associated with construction activities on the Monument Grounds and the operation of construction vehicle access to and on the Grounds. Construction activities for Alternative B would result in intermittent short-term noise effects for the duration of noise-generating construction activities. The noise produced during construction would vary daily depending on the type of construction activity. The basic construction activities may include demolition, excavation and grading, utility construction, and building construction. Demolition for Alternative B would include the removal of paved areas in the Monument Plaza and specific Grounds pathways and modifications to the structures in the Sylvan Theatre area. Noise would be generated during excavation and grading, and utility and building construction of new visitor security screening facilities. Noise would be generated by construction equipment during all phases of construction, including the movement of heavy trucks to and from the site, and construction worker commute vehicles.

Construction would be required to comply with District noise control regulations: between 7 AM and 7 PM, noise generated by construction equipment (not including pile drivers) shall not exceed 80 dB(A) at a distance of 25 feet outside the construction site and between 7 PM and 7 AM, noise generated by construction equipment shall not exceed 55 dB(A) at a distance of 25 feet outside the construction site. The specific types of equipment that would be used for demolition, grading, utility, paving, and building construction phases are not known at this time. Construction activities would normally involve the use of bulldozers and jack hammers during demolition; bulldozers, scrapers, backhoes, and trucks during excavation and grading; backhoes during utility construction; and pile drivers, concrete mixers and pumps, saws, hammers, cranes, and forklifts during building construction. Table 5.1.7 -1 presents typical noise levels for various types of construction equipment. There are no sensitive noise receptors on the Grounds, as defined in Section 4.1.7. Unless construction would include pile driving near the property line, it is not anticipated that construction noise limits would be exceeded at the property line. Therefore, no adverse impact from construction activities on the site is anticipated for Alternative B.

Noise generated by new heating, ventilating and air conditioning (HVAC) equipment, vehicles, and facilities maintenance equipment such as lawnmowers is not anticipated to change from the existing noise levels from these sources. Therefore, there would be no adverse noise impact.

Mitigation

Best management practices and construction procedures will be implemented during construction of Alternative B to minimize construction noise at the sources as necessary to meet District standards. Noise barriers will be used as necessary to attenuate noise from the construction site. It is recommended that construction specifications require the selection of truck routes that will minimize the potential for truck noise impact during construction.

6.2 CULTURAL RESOURCES

6.2.1 Archaeological Resources Impacts – Alternative B

Alternative B would have no effect on archaeological sites that may be potentially eligible for nomination to the National Register. None of the proposed alterations would be below the stratum of fill that sits on top of the historic circa 1878 grade. Consequently, potential archaeological sites would be located below the project area or outside of the project area bounds.

During implementation, debris relating to previous construction and/or modifications could potentially be encountered. Should resources be encountered during construction, however, activities will stop while appropriate studies are conducted.

6.2.2 Historical Resources Impacts – Alternative B

The programmatic agreement, which spells out the consultation process as required by Section 106 of the National Historic Preservation Act and Advisory Council regulations (36 CFR Part 800) for Alternative A (See Appendix), would be amended to consider the proposed security improvements under Alternative B.

Alternative B would involve the removal of the interim screening structure that currently exists at the base of the Monument. This would be a positive impact for historic resources. Alternative B would also replace the existing asphalt around the base of the Monument with an interior ring of grass and an outer ring of granite. The double-fenced security pathway would bisect the plaza and would introduce a new element that is not compatible with historic plans for the Monument.

Alternative B's addition of a continual line of bollards would generate a major negative impact on the landscape of the Grounds. Since bollards are typically located in relation to urban walkways and streets, they would be appropriate along the sidewalk but would offer an unsympathetic contrast to the naturalistic landscape of the Grounds and would appear as a solid wall when viewed obliquely.

Alternative B would also affect the Sylvan Theatre by placing two new buildings for visitor screening, education and interpretive areas, a bookstore and restrooms as part of the existing complex. The Sylvan Theatre is an important element in the overall landscape and any new construction must be compatible with the design of the existing buildings. The new facilities and double-fenced security pathway would have a moderately negative impact on the Sylvan Theatre complex and cultural landscape.

Alternative B would create a positive impact on the Monument Lodge by restoring it to its original historic appearance. Alternative B would also create a positive impact by retaining and enhancing some of the landscape elements and features, which are contributing resources to the landscape of this historic resource. For example, the flagpoles around the base of the Monument would be retained.

Mitigation

- The overall design concept will be subject to design review by public agencies prior to implementation.
- The visitor screening and service facility at the Sylvan Theatre complex will be built into the side of the hill to minimize its visibility within the landscape.
- Ground surfaces and planting materials will be of the highest quality and appropriate to historic precedents.

6.2.3 Cultural and Ethnographic Resources Impacts – Alternative B

The November 2001 *Program Requirements for the Washington Monument Permanent Security Improvements* cite “Preservation of Cultural Landscape Quality” as a primary objective in the design. Therefore, consideration of this factor is important in evaluating both build alternatives and the No Action Alternative.

Alternative B’s proposal to build an above-grade visitor screening facility at the Sylvan Theatre complex and create an above-grade, double-fenced security pathway would have a major negative impact on the cultural landscape quality of the Monument Grounds. The security pathway would block pedestrian movement across the Grounds between the Sylvan Theatre and the Monument, as well as on the plaza. In addition, an intrusive new facility would be introduced into the landscape. Although the proposal retains the Sylvan Theatre’s use for cultural events, it adds another feature and another use to the immediate area. This use could conflict with cultural events and public gatherings that occur during the operating hours of the Monument.

Alternative B’s reconfiguration of the walkways would make cultural gatherings and events open and accessible to more people approaching the Grounds from the north or west. However, although Alternative B would remove the temporary structure on the Monument’s eastern side, it would bisect the plaza and restrict unimpeded circulation around the Monument. Overall, a double-fenced security pathway would be a major impact on the cultural landscape.

6.2.4 Visual Resources Impacts – Alternative B

Visual Impact on the Grounds

Under Alternative B, new buildings would be clustered near the Sylvan Theatre in an adjacent location. In addition, the existing 16th Street parking lot would be removed and pathways would be altered to allow for ease of pedestrian flow. However, a double-fenced security pathway would be highly visible from most points on the east and south sides of the Grounds. As a result, the Grounds would have a more graceful appearance to the north and west, but a degraded appearance to the east and south. The addition of 32-inch-high safety bollards along the perimeter of the Grounds could interrupt the intended gentle landscape. The addition of these two new above-ground linear features together would have a major adverse impact.

Furthermore, as groups of visitors walk across the Grounds through the secured pathway, they would create a regular pattern of movement noticeable to the eye, altering the current aesthetic condition of the site. Overall, Alternative B would restore only some of the visual integrity of the Grounds.

Visual Impact on the Plaza

The plaza surrounding the base of the Washington Monument would be reconfigured under Alternative B. There would be a centered grassy area (to surround the Monument at its base) edged with granite and a low granite wall to direct pedestrian flow around an outer path, which would be composed of exposed aggregate concrete. The above-grade, double-fenced security pathway would bisect the plaza and terminate at, but not attach to, the Monument. Away from the Monument, the grassy portion of the plaza would present a pleasant contrast to the simplicity of the obelisk.

Visual Impact on Views and Vistas

Overall, views and vistas would not be protected under Alternative B, although replacing the existing concrete jersey barriers with the proposed ring of bollards would give the Grounds a neater appearance. Clustering new buildings within an area of substantial trees would minimize

impacts on views to and from the Monument along the north-south axis. In addition, by removing the 16th Street parking lot, views would no longer be obstructed by cars.

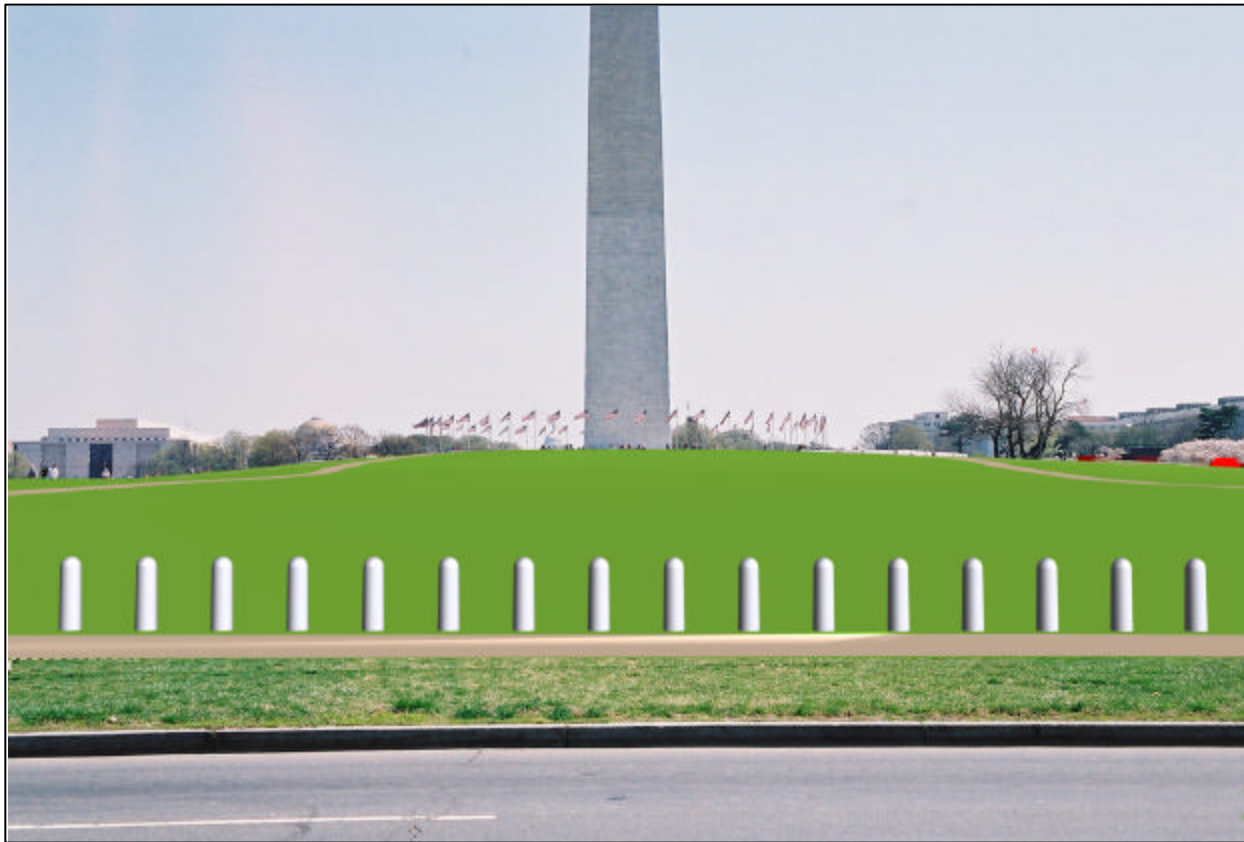
However, the installation of security bollards along the entire perimeter of the Grounds, and the introduction of an above-grade, double-fenced security pathway, would substantially alter views from the east. The new structures would detract from the central east-west axis and result in a major negative visual impact.



Simulation #1 – View from 14th Street and Independence Avenue looking northwest toward the Washington Monument Grounds. The simulation illustrates the security bollards placed along the perimeter of the Grounds as a vehicle barrier system, and the introduction of a double-fenced security pathway connecting to the Monument. In addition, the concrete jersey barriers have been removed.



Simulation #2 – View from 17th Street and Independence Avenue looking northeast towards the Washington Monument. The simulation illustrates the open character of the Grounds to the west.



Simulation #3 – View from West Potomac Park and 17th Street looking east towards the Washington Monument. The simulation illustrates the bollard vehicle barrier system located along the perimeter of the Grounds, and includes the removal of the concrete jersey barriers.



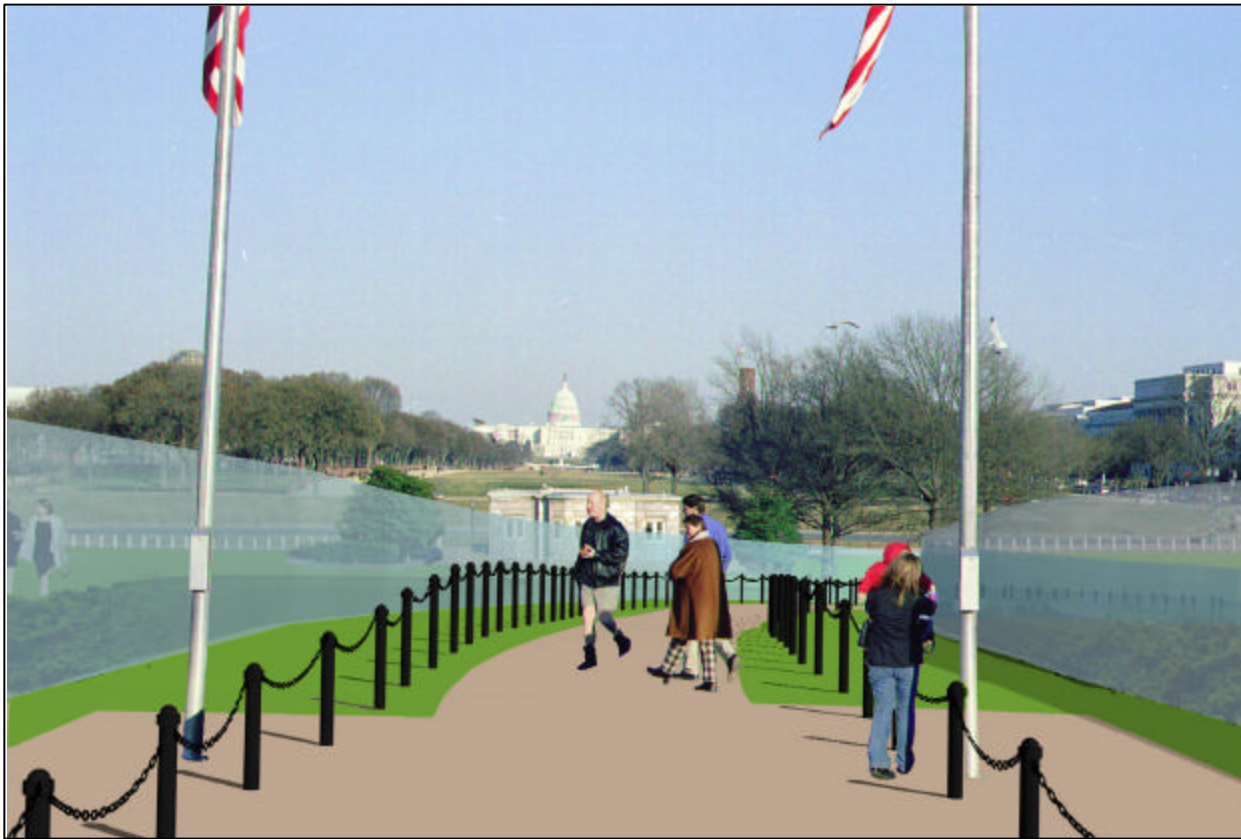
Simulation #4 – View from Constitution Avenue near the 16th Street parking lot looking southeast towards the Washington Monument. The simulation illustrates the removal of the parking lot and completion of the German-American Friendship Garden.



Simulation #5 – View from Milepost 0 Marker on north side of the Ellipse looking south towards the Washington Monument and the Jefferson Memorial. The simulation illustrates the continued open character of the Grounds and the preservation of the north-south vista to the Jefferson Memorial.



Simulation #6 – View from corner of 15th Street and Constitution Avenue looking southwest towards the Washington Monument. The simulation illustrates the security bollard vehicle barrier system located along the perimeter of the Grounds.



Simulation #7 – View from the Washington Monument looking east towards the U.S. Capitol Building and the National Mall. The simulation illustrates the double-fenced security pathway, the removal of the concrete jersey barriers, and the relocation of the flood light bays from the foreground of the view. Trees that would be added under the landscaping plan are not included.



Simulation #8 – View of the southern corner of the Monument Grounds. The simulation illustrates the security bollards along the perimeter sidewalk and the new screening facilities next to the Sylvan Theatre.

6.3 VISITOR USE AND EXPERIENCE

The methodologies and assumptions utilized to evaluate Alternative B are the same as those for Alternative A. Please refer to Section 5.3.1 for a discussion of these methodologies.

6.3.1 Visitation Patterns Impacts – Alternative B

Current visitation levels would continue under Alternative B. Similar to Alternative A, the physical capacity restrictions of the Washington Monument interior would continue to limit the number of visitors who would experience the Monument tour.

New visitor facilities located adjacent to the Sylvan Theatre would provide a number of new and potentially beneficial features for visitors; however, they would not contribute to increased visitation beyond current levels. The facility would provide enhanced interpretive opportunities that currently do not exist at the Monument, as well as improved concession services. These improved elements would provide educational opportunities to visitors who arrived at the Monument but were unable to obtain a tour ticket. However, the location of the visitor facilities would be removed from the greatest concentration of visitor access points and circulation patterns.

6.3.2 Visitor Experience Impacts – Alternative B

Visitor Access and Orientation

The new visitor services and screening facilities would alter how visitors arrive at and access the Washington Monument. Visitor services would be shifted from the base of the Monument and the primary pedestrian movement patterns (access predominately from the east and north) to the area adjacent to the Sylvan Theatre. The relocation of these visitor services such as ticketing would result in moderate adverse impacts as visitors are forced to adapt to the new facility locations. However, increased contacts with NPS personnel and with signs and maps could direct visitors to this less used and less visible area of the Monument Grounds, mitigating some of the potential visitor confusion.



Alternative B Site Access Diagram

To meet accessibility standards for disabled visitors, the access route from the low-lying visitor and screening facilities would follow an indirect route uphill to the Monument. The access route would consist of a double-fenced security pathway. The security pathway would also create a barrier to pedestrian movement on the Grounds because pedestrians would be prohibited from crossing the pathway. Away from the double-fenced security pathway, visitors would continue to have access to the grassy areas of the Monument Grounds if they desire to wander off the walkways. The low granite wall surrounding the newly created grassy portion of the plaza would allow visitors to rest and relax while viewing the exterior of the Monument or the adjacent landscape.

Because tours would be organized and conducted from the screening facility southeast of the Monument, fewer official vehicles such as sanitation trucks and park police vehicles would be on the Monument Grounds. The removal of these vehicles and the replacement of jersey barriers with bollards would provide a minor positive impact to the visitor experience. However, the construction of several new facilities in the southeast corner of the site and the associated visitor congestion could negatively impact visitors as they negotiate their way around these facilities to the Monument. Overall, changes to the walkways and Monument plaza under Alternative B would result in adverse impacts to visitor access and orientation to the Washington Monument.

Washington Monument Tour

The new above-ground facility at the Sylvan Theatre would consist of two buildings that would house ticketing and screening facilities as well as visitor amenities, including a new educational and interpretive facility. These new facilities would not change the essential components of ascending the Washington Monument, but they would alter the tour process prior to entering the Monument.

Similar to the other alternatives, the process of acquiring a ticket for ascending the Monument would remain the same. Visitors could continue to obtain their tickets in advance via reservation or acquire their ticket on a first-come, first-served basis the morning of their desired tour date. On-site ticketing would be available in the one of the new buildings clustered behind the Sylvan Theatre. The building would not as visible as the existing kiosk; however, it would provide protection from inclement weather. Overall, impacts to visitors during the ticketing process would be negligible.

While waiting for their tour, visitors would have a variety of activities to enjoy. The visitor services building and the interpretive facility would provide shopping and educational opportunities. The exhibits would provide educational information to those visitors unable to obtain a tour ticket. These activities would be located in multiple buildings that would not be convenient or easily accessed during bad weather. However, the addition of educational and interpretive opportunities would have a minor positive impact on visitor experience.

Queuing and screening for tours would occur at a complex addition to the Sylvan Theatre. One of the new buildings behind the Sylvan Theatre would be dedicated to ticketing and one to visitor screening. Visitors would queue in the building and be screened, prior to being escorted to a tour waiting area outside the building. This area would be segregated and guarded from the general public. Tours would be led by NPS Rangers or other personnel in a double-fenced security pathway that curves northwest to the Monument. Visitors would enter the Monument at the ground level and continue with the tour in the Monument.

Under this tour scenario, the queuing and screening process would be somewhat removed from the Monument in an area that is protected by vegetation and by the cover of several buildings, thereby, resulting in some protection from the weather during queuing and screening. The approach to the Monument would be above ground and allow visitors to view the Monument in its current context, although a double-fenced security pathway could detract from this experience because visitors would be segregated from the surrounding environment via physical structures.

Once visitors entered the Washington Monument, the tour would continue as it currently does today. Upon completing the tour, visitors would exit on the eastern side of the Monument. From there, the double-fenced pathway would detract from the axial view of the U.S. Capitol. Any strollers that were left in a non-secured area of the visitor screening facility would have to be retrieved by returning to the visitor facility. This return trip would result in minor negative impacts to visitors because of the inconvenience.

6.3.3 Resource Interpretation Impacts – Alternative B

The features most often enjoyed by Washington Monument visitors would not be affected by a new screening facility. Visitors with tour tickets would be provided the same experience no matter where the screening facility is located.

A new educational and interpretive facility would allow visitors to learn more about George Washington, the Monument's history, and the Federal City. Educational and interpretive exhibits would also provide minor to moderate benefits to visitors unable to acquire a tour ticket, particularly if visitors are able to hear from NPS Rangers who can help visitors form intellectual and emotional connections with the Monument. However, the location of educational and interpretive exhibits and programs in a building separate from ticketing, tour queuing, and security would not benefit visitor experience to the same degree as a facility where all functions are located together and easily accessible. In addition, the location of visitor facilities in a less-used area of the Grounds would have a further adverse impact on the visitor experience.

Cumulative Impacts

Existing tours and interpretive opportunities would continue to be available at museums, memorials, and other NPS sites in the vicinity of the Washington Monument. These opportunities would continue to enhance the visitor experience.

The ticketing, screening, and visitor service facilities near the Sylvan Theatre would create conflicts with performances and other activities because of their proximity. Washington Monument tours, particularly during extended evening hours, would be staged behind the Sylvan stage and would be led along the path immediately to the east of the theatre potentially creating noise and visual impacts. These distractions would result in moderate impacts to the experience of theatre or concert attendees.

Overall, visitation to the Washington Monument would be adversely affected by the above-ground screening facility and double-fenced security pathway. The number of visitors on the Washington Monument tour would continue to be limited by the capacity of the elevator at the observation level and the intrinsic qualities of the tour would remain the same. Visitors would continue to have access to base of the Monument via accessible walkways. However, access

across the Grounds near the southeastern corner would be blocked by the double-fenced security pathway. Relocation of ticketing, security screening, and tour queuing to new facilities at the Sylvan Theatre would alter the visitor experience. A new educational and interpretive facility would be located separately from other functions, providing fewer benefits than a facility where all functions are located together. Visitors would access the Monument above ground, receiving some protection from the elements during queuing and screening but not while approaching and accessing the Monument. Overall Alternative B would result in a minor negative improvement to the visitor experience.

6.4 SOCIO-ECONOMIC ENVIRONMENT

6.4.1 Land Use Impacts – Alternative B

As the largest open space in the heart of the Nation’s Capital, the Washington Monument Grounds are an important recreational and natural resource for the city. Therefore, it is important that the alternatives respect and enhance the existing land uses of the site. Under Alternative B, the proposed vehicle barrier system would consist of bollards located along the perimeter of the Grounds. While this would provide challenges for event setup and breakdown, as well as slightly disrupt pedestrian movement, the Monument Grounds would retain their general land use and context as an open space used for ceremonial, recreational, educational, and cultural functions. Activities on the Monument Grounds would continue to be conducted pursuant to NPS permitting procedures and requirements.

In addition, Alternative B would retain the Survey Lodge for administrative use; however, the alternative would build additional facilities at the Sylvan Theatre for visitor screening and services, which would introduce new activities to the less-used southeast portion of the Grounds. The double-fenced security pathway inhibits free movement across the southeast corner of the Grounds and prevents circumnavigation of the Monument itself at the plaza. When the interior of the Monument is closed, limited circulation on the plaza would occur. Alternative B would also remove the parking lot to the north of the Monument. This would create a positive impact by allowing the German-American Friendship Garden to be completed consistent with its original design intent and use. Overall, Alternative B would be moderately inconsistent with current use of the site and the study area.

Plans and Policies

Alternative B would be consistent with the *Comprehensive Plan for the National Capital, Federal Elements* (1977-1984, updated 1990). With respect to the *Preservation and Historic Features* element, in the Alternative B would comply with the following policy:

- The adaptive use of the Monument Lodge as a visitor services and maintenance facility would provide for the continued, appropriate use of the Historic Property.

Alternative B would not be consistent with the *Comprehensive Plan for the National Capital, Federal Elements* (1977-1984, updated 1990), particularly with respect to the following policies of the *Parks, Open Space and Natural Features* element:

- The introduction of above-ground structures, would not preserve the integrity of the Monumental Core as a setting to enhance public buildings and monuments.
- The presence of a double-fenced security pathway would create a barrier that blocks pedestrian circulation across the Grounds.
- The proposed bollards would intrude upon the naturalistic landscape and would not enhance the distinguishing qualities and character of the Historic Landscape.

Likewise, Alternative B would not affect NPS regulations about sales, concessions and permitting.

6.4.2 Recreation Impacts – Alternative B

The security bollards proposed under Alternative B would be placed along the perimeter of the Grounds. This would allow most recreational uses to continue on most of the Grounds. However, the perimeter bollards would slightly disrupt the movement of pedestrians and joggers. The proposed above-grade, double-fenced security pathway from the Sylvan Theatre to the Monument would also preclude free pedestrian and recreational movement across the southeastern section of the Grounds. In addition, the perimeter bollards would disrupt the staging of activities and events that require trucks for set up and breakdown (i.e., jumbo video screens, tents, temporary stages, etc.)

6.4.3 Socio-Economic Resources Impacts – Alternative B

Socio-economic resources, including population and economic conditions, are generally affected by a proposed action when there are residential or commercial/retail uses on or in the immediate vicinity of the site. Since there is no housing located within or adjacent to the study area, there would not be any measurable impacts to housing, community services, social conditions, or

population. Likewise, since there is no commercial/retail space within or adjacent to the study area there would be no measurable impacts to economic resources.

6.4.4 Infrastructure Impacts – Alternative B

The development of Alternative B would result in minor impacts to infrastructure at the Monument Grounds. More specifically, the project would result in moderate impacts to pedestrian infrastructure at the Grounds due to the double-fenced security pathway, and minimal impacts to parking, as discussed regarding the impacts of Alternative B on transportation. The stormwater infrastructure at the Grounds would not be substantially affected by Alternative B. Other utility infrastructure at the Grounds would not be substantially affected by development of Alternative B.

As discussed regarding the impacts of Alternative B on visitor use and experience, development of Alternative B would not result in increased visitation to the Monument. Therefore, demand upon the electric, gas, steam, water, and sanitary sewer lines at the Grounds would not increase due to Alternative B. Design and configuration of the utility lines at the Grounds in response to the orientation of new facilities in Alternative B would be the responsibility of the utility service providers.

6.4.5 Transportation Impacts – Alternative B

Walkways

Under Alternative B, walkway reconfigurations to provide increased accessibility would result in a positive impact to pedestrian access. However, the double-fenced security pathway from the new screening facility at the Sylvan Theatre complex to the Monument would interrupt pedestrian circulation across the Grounds and result in a moderate negative impact.

Parking

Alternative B would eliminate the parking lot located on the north side of the Grounds, accessed by Constitution Avenue. The lot provides 108 parking spaces; however, these spaces are not only dedicated to visitors of the Monument and its Grounds. This parking lot, as with other parking

areas on or near the Mall, are part of a parking plan that allows visitors to access several monuments from one of the parking areas without moving their vehicle. Accommodating access to the Monumental Core of the Nation's Capitol is part of an ongoing NPS transportation study, investigating alternatives for a vehicular transportation system.

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CHAPTER 7



ENVIRONMENTAL CONSEQUENCES – ALTERNATIVE C

APRIL 2002

7.1 NATURAL RESOURCES

7.1.1 Geophysical Resources Impacts – Alternative C

Analysis of the impacts of Alternative C on geophysical resources at the Monument Grounds was prepared in the same manner as the evaluation of geophysical impacts of Alternative A.

The No Action Alternative would not modify the existing conditions at the Washington Monument Grounds; therefore, implementation of Alternative C would result in no impacts to geophysical resources at the Grounds.

7.1.2 Water Resource Impacts –Alternative C

The No Action Alternative would not modify the existing conditions at the Washington Monument Grounds; therefore, implementation of Alternative C would result in no impacts to water resources at the Grounds.

7.1.3 Vegetation Impacts – Alterna tive C

The No Action Alternative would not modify the existing conditions at the Washington Monument Grounds; therefore, implementation of Alternative C would result in no impacts to vegetation at the Grounds.

7.1.4 Wildlife and Aquatic Life Impacts – Alternative C

The No Action Alternative would not modify the existing conditions at the Washington Monument Grounds; therefore, implementation of Alternative C would result in no impacts to wildlife at the Grounds.

7.1.5 Hazardous Material Impacts – Alternative C

Under Alternative C, existing soils would not be disturbed by grading, landscaping, and cut/fill activities or construction of the access screening facilities and improved pathways on the grounds. Existing structures would not be altered exposing or disturbing existing hazardous materials.

7.1.6 Air Quality Impacts – Alternative C

Under Alternative C, there would be no impacts to ambient air quality. No mitigation is required.

7.1.7 Noise Level Impacts

Under Alternative C, no construction would occur; therefore, there would be no noise impacts. As a result, no mitigation is required.

7.2 CULTURAL RESOURCES

7.2.1 Archaeological Resource Impacts – Alternative C

Alternative C would have no effect on any archaeological sites that may be potentially eligible for nomination to the National Register.

7.2.2 Historical Resources Impacts – Alternative C

The existing ring of temporary concrete jersey barriers around the Monument is detrimental to the historic character and context of the Monument Grounds. In addition, the retention of the modern addition to the Monument Lodge and the interim security structure attached to the east face of the Monument would continue to detract from the integrity of the historic structures.

7.2.3 Cultural and Ethnographic Resource Impacts – Alternative C

Under Alternative C, the presence of the concrete jersey barriers would limit cultural activities and events on the Monument Grounds. Specifically, events that are held on or near the Monument plaza, such as citizenship ceremonies and Washington's Birthday celebrations, would be constrained.

7.2.4 Visual Resource Impacts – Alternative C

By keeping the concrete jersey barriers in place, Alternative C would continue to obstruct views to and from the Washington Monument. This alternative would continue to have a major visual impact on the aesthetic quality and integrity of the Washington Monument Grounds, the plaza, and portions of the Monumental Core.

7.3 VISITOR USE AND EXPERIENCE

The methodologies and assumptions utilized to evaluate Alternative C are the same as those for Alternative A. Please refer to Section 5.3.1 for a discussion of these methodologies.

7.3.1 Visitation Patterns Impacts – Alternative C

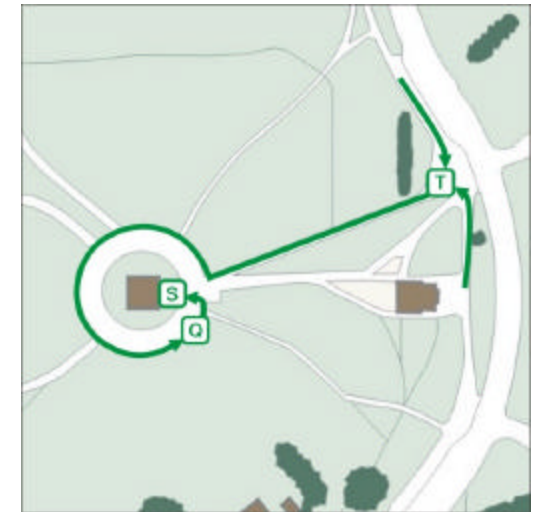
Current visitation patterns would continue under Alternative C. The same number of persons would visit the Monument and the access procedures would be the same.

7.3.2 Visitor Experience Impacts - Alternative C

Visitor Access and Orientation

Visitors would continue to arrive at the Monument from other memorials and visitor attractions in Washington, DC. As noted in the visitor use study (Idaho 1998), visitors approach from multiple locations, but particularly from the north and east. Visitors would continue to use sources of information, such as site brochures, ranger staff, and visitor kiosks, to navigate their way around the Monumental Core of the Nation's Capital. On-site orientation information would continue to be limited, with rangers providing much of the available information to visitors outside the Monument.

The existing jersey barriers would continue to cause moderate adverse impacts to the visitor experience. Paths leading up to the Washington Monument would continue to violate accessibility standards, adversely impacting visitors with disabilities. Vehicles that access and park on the Monument Grounds for maintenance, security, and other official purposes would continue to cause similar impacts by littering the landscape surrounding the Monument and inhibiting pedestrian circulation.



Alternative C Site Access Diagram

Washington Monument Tour

The ticketing and Monument ascent process would continue as described in Chapter 4 of this document (Affected Environment). Visitors would acquire their tickets in advance via reservation or at the ticket kiosk on the morning of their desired tour. For those visitors getting tickets on the day of their tour, most would have to return to the Monument later in the day to actually take the tour. While this is a positive impact from waiting in long lines to access the Monument solely on a first-come, first-serve basis, this delay between ticketing and participation in the tour can result in minor to moderate impacts due to scheduling issues for visitors, particularly if visits to other sites (such as the White House or Holocaust Museum) are planned that also require tickets and timed entries. This impact could be minimized in the future as a greater percentage of the daily tickets become available for reservations and more visitors become aware of the availability of advance tickets.

Prior to ascending the Monument, visitors would have the opportunity to view the Monument and surrounding views of the National Mall as they approached. In addition, all visitors would continue to be able to view the Monument from other sites and locations throughout the National Mall, such as the U.S. Capitol, the Smithsonian museums, and the Lincoln Memorial. However, these approach and distant views would continue to include the concrete jersey barriers and security vehicles that detract from the quality of these views.

Once at the Monument for their tour, visitors with timed tickets would wait in one of the two lines, which denote the half-hour time slot for their scheduled tours. This wait outside in the elements could be pleasant in excellent weather conditions or physically uncomfortable during wind, rain, or hot and humid conditions. During adverse weather conditions, this would continue to detract from a visitor's ability to enjoy and learn about the Monument. As a result, Alternative C would have a moderate adverse impact on visitor experience.

Prior to entering the Monument, the security screening facility would continue to screen each individual visitor in preparation for the tour. Removing personal items would continue to detract from the tour but, in light of recent threats to national security, would continue to be accepted willingly by most visitors.

7.3.3 Resource Interpretation Impacts – Alternative C

The tour features most often enjoyed by Washington Monument visitors would continue in their current configuration. Visitors would be able to view Washington, DC from the top of the Monument and view some of the newly restored commemorative stones as they descend. Limited educational exhibits inside the Monument would also continue to be available for daily viewing.

Based on the 1998 visitor surveys (University of Idaho and West Virginia University), the greatest limitation of the Washington Monument from a visitor experience perspective would continue to be the restricted time and physical space available for quality educational and interpretative programs. Because of the high volume of people that are taken through the Monument daily, NPS rangers would not have the opportunity to provide extensive interpretive programs. Only the 70 seconds during the ascent to the Monument's top and the several minutes on the return trip would continue to be available to focus on the Monument's history, resulting in ongoing minor adverse impacts to visitor experience.

Cumulative Impacts

Existing tours and interpretive opportunities would continue to be available at museums, memorials, and other NPS sites in the vicinity of the Washington Monument. These opportunities would continue to enhance the visitor experience.

Overall, visitation to the Washington Monument would continue to be adversely affected by the continued use of concrete jersey barriers and an interim screening facility. While the number of visitors able to ascend the Monument would not change, the visual setting for the Monument would continue to be impaired by existing security facilities, thereby detracting from the visitor experience. Overall, Alternative C would have a moderate adverse impact on visitor experience.

7.4 SOCIO-ECONOMIC ENVIRONMENT

7.4.1 Land Use Impacts – Alternative C

Alternative C would be consistent with the current land use of the site and the study area. The Monument Grounds would retain their general land use and context as open space used for ceremonial, recreational, educational, and cultural functions. Activities on the Monument Grounds would continue to be conducted pursuant to NPS permitting procedures and requirements. Alternative C would also retain all of the existing buildings and elements on the Grounds for their current uses.

Plans and Policies

Alternative C would continue to be inconsistent with the *Comprehensive Plan for the National Capital, Federal Elements* (1977-1984, updated 1990). The continued presence of the concrete jersey barriers and the interim screening facility would not comply with the Parks, Open Space and Natural Features element and the Preservation and Historic Features element. Alternative C would also not affect NPS regulations about sales, concessions and permitting.

7.4.2 Recreation Impacts – Alternative C

Alternative C would maintain the existing ring of concrete jersey barriers, which disrupt access on the inner pathways. Therefore, this situation poses a continued negative impact to walkers and joggers, who must navigate constrained openings to the pathways.

7.4.3 Socio-Economic Resource Impacts – Alternative C

Since there is no housing located within or adjacent to the study area, there would not be any measurable impacts to housing, community services, social conditions, or population. Since there is no private commercial/retail space within or adjacent to the study area, there would be no measurable impacts to economic resources.

7.4.4 Infrastructure Impacts – Alternative C

The No Action Alternative would not modify the existing conditions at the Washington Monument Grounds. Therefore, implementation of Alternative C would result in no impacts to infrastructure at the Grounds.

7.4.5 Transportation Impacts – Alternative C

Under Alternative C, the current access paths from 15th Street to the base of the Monument would remain in their current location and condition. Existing jersey barriers would continue to disrupt pedestrian access to pathways. Therefore, Alternative C would continue the existing negative circulation impacts on the Grounds and the National Mall.

CHAPTER 8



CONSULTATION AND COORDINATION

APRIL 2002

8.1 Institutional Framework

The proposed improvements for the Monument and Grounds must comply with federal and local environmental and historic preservation laws and procedures, including permits and approvals. As a result, this EA includes the information required to document the effects on the environment and historic properties that can be attributed to the proposed action, as required by NEPA, NHPA, SHPO, ACHP, NCPC, and the environmental policies and procedures of the NPS (including Director's Order-12).

8.2 Scoping

It is a policy requirement of NPS to engage in a public scoping process as part of the preparation of an EA. The purpose of the scoping process is to allow citizens and public agencies to identify issues that should be addressed in the EA, including but not limited to, alternatives, potential impacts, and suggested mitigation measures. For the purpose of this EA, the scoping process was undertaken through the public presentation and review process conducted by the NCPC. Additional public outreach was achieved through the ongoing Section 106 process (discussed in detail in Section 1.4.4).

8.3 Comments on the EA

Agencies and the public are encouraged to review and comment on the contents of this EA, which is available on the NPS website: www.nps.gov/wamo/. Written comments must be submitted during the official 30-day comment period. Comments should be sent via fax or email to:

Arnold Goldstein, Superintendent
National Capital Parks – Central
National Park Service – National Capital Region
Fax: (202) 426-1835
Email: NACC_Superintendent@nps.gov

Public testimony on the EA can also be provided at the NCPC Public Meetings that are held on the first Thursday of the month. Announcements of the meeting time and location are available in advance.

8.4 Section 106 Consultation

The NPS is required to make a determination of the effect of an Undertaking on properties listed in, or eligible for listing in, the National Register. The ACHP, the NPS, NCPC, and DC SHPO have developed a Programmatic Agreement that describes how consultation will occur and ensures that the project, to the extent feasible, complies with the Secretary of the Interior's Standards for Rehabilitating Historic Structures and Historic Landscapes. The signatories have invited other interested parties to concur in the Programmatic Agreement and participate in the consultation process (See Appendix).

As a component of the Programmatic Agreement, a Cultural Landscape Report on the Washington Monument Grounds and a Monument Lodge Historic Structures Report are currently underway and will be distributed prior to the submission of preliminary design plans. The NCPC, CFA, and DC HPRB have approved the design concept for the Monument permanent security improvements.

The Programmatic Agreement stipulates that the design of the Monument take into account the required NEPA analysis and studies and the Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings and Cultural Landscapes to ensure the compatibility of the design with the cultural and historic landscape and features of the Monument Grounds. The signatories and concurring parties to the Agreement will be notified of all design plan submissions and changes to the Monument plan. All relevant reports will be distributed to the signatories and concurring parties and every effort will be made to ensure the most efficient flow of information and ease of amending this agreement based upon changing circumstances.

CHAPTER 9



COMPLIANCE WITH FEDERAL AND STATE REGULATIONS

APRIL 2002

9.1 List of Permits/Approvals

The NPS has prepared this EA in accordance with and to fulfill the National Environmental Policy Act of 1969, as amended (NEPA) and the Council on Environmental Quality (CEQ) regulations implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508], the National Historic Preservation Act of 1966, as amended (NHPA), and the NPS Director's Order-12 (DO-12). In accordance with NEPA, this EA addresses short-term construction-related impacts and long-term changes to existing environmental conditions under each of the proposed alternatives, as well as the cumulative impacts that would result from this and other proposed projects in the area.

The following is a preliminary list of permits and approvals that could be required by various Federal and District agencies for the proposed action at the Washington Monument.

Federal

- Advisory Council on Historic Preservation, Section 106 Consultation on potential effects to historic properties
- National Capital Planning Commission Project Review
- Commission of Fine Arts

District of Columbia

- State Historic Preservation Office
- Water and Sewer Excavation Permits
- Supplemental Systems Installation Permit
- Erosion and Sediment Control Permit

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CHAPTER 10



APPENDICES

APRIL 2002

10.1 Programmatic Agreement

PROGRAMMATIC AGREEMENT AMONG THE NATIONAL PARK SERVICE, NATIONAL CAPITAL PLANNING COMMISSION, DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER, AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING IMPLEMENTATION OF PERMANENT SECURITY IMPROVEMENTS TO THE WASHINGTON MONUMENT AND ITS GROUNDS

WHEREAS, the National Park Service (NPS) proposes to amend the 1993 Washington Monument Grounds Development Concept Plan (DCP) to include the construction of permanent security improvements for the Washington Monument and its Grounds (Monument) by implementing the concept plan developed by the Olin Partnership (Undertaking) and accepted by the NPS on December 19, 2001; and

WHEREAS, the major components of the Undertaking include constructing paths and retaining walls approximately 400 feet from the base of the Monument, an underground visitor screening facility, a skylight above this facility, a tunnel connecting the facility to the Monument and alterations and/or additions to the Monument Lodge; and

WHEREAS, on August 31, 1993, the District of Columbia State Historic Preservation Officer (SHPO) concurred in the NPS determination that the 1993 DCP's proposed improvements, at a conceptual stage, would have no adverse effect on the Monument, provided that the design of each of the components would be subject to further Section 106 review; and

WHEREAS, certain components of the Undertaking, as proposed, are consistent with the approved 1993 DCP although the 1993 NPS determination of no adverse effect is not applicable to this Undertaking; and

WHEREAS, the National Capital Planning Commission (NCPC) on February 7, 2002, the Commission of Fine Arts (CFA) on February 21, 2002, and the District of Columbia Historic

Preservation Review Board (HPRB) on February 28, 2002, approved the design concept for the Undertaking; and

WHEREAS, the NPS has determined that the Undertaking will have an effect on the Monument, a property listed on the National Register of Historic Places, and may have an effect on the Mall, Ellipse, L'Enfant Plan and West Potomac Park, properties listed in the National Register, and has consulted with the Advisory Council on Historic Preservation (Council) and the SHPO pursuant to Section 800.14(b)(3) of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) (NHPA); and

WHEREAS, pursuant to 36 CFR § 800.14, this Programmatic Agreement (Agreement) sets forth the process by which NPS will meet its responsibilities under Section 106 of the NHPA; and

WHEREAS, by entering into this Agreement, NCPC hereby designates NPS as lead federal agency for the Undertaking pursuant to 36 CFR § 800.2(a)(2), and

WHEREAS, the consultative process provided for in this Agreement will facilitate, but not substitute for, public participation in the preparation of a supplemental environmental assessment (EA) pursuant to the National Environmental Policy Act (NEPA); and

WHEREAS, this Agreement embodies short time frames due to the fundamental interest in improving the aesthetics of the existing temporary security measures in the Nation's Capital as well as the need for enhanced permanent security improvements to the Washington Monument and its Grounds; and

WHEREAS, the CFA, National Coalition to Save Our Mall, Committee of 100 on the Federal City, D. C. Preservation League, American Society of Landscape Architects, Washington National Monument Association, National Trust for Historic Preservation, Guild of Professional Tour Guides, and Advisory Neighborhood Commission 2A (Consulting Parties) have been invited to participate in the consultation process for this Agreement and to concur in this Agreement as jointly developed by the Signatories and Consulting Parties;

NOW THEREFORE, the NPS, the NCPC, the Council, and the SHPO (Signatories) agree that in accordance with 36 CFR § 800.14(b), the following stipulations will govern implementation of the Undertaking and resolution of effects:

1. Taking into account the information obtained through the NEPA analysis and the studies referenced in Stipulations 8, 9 and 10, NPS shall ensure that the development of the design is compatible with the qualities of the Monument, the surrounding cultural landscape, the Monument Lodge, and other historic features of the Monument Grounds that qualify this as well as adjacent historic properties for the National Register of Historic Places; and, to the extent feasible, is consistent with the recommended approaches to rehabilitation set forth in the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings; and, to the extent feasible, is consistent with the recommended approaches to cultural landscape treatments set forth in the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Cultural Landscapes (Secretary's Standards).
2. Upon execution of this Agreement, the NPS shall convene a meeting of the Signatories and Consulting Parties to identify, discuss and consider potential effects of the Undertaking on the historic properties and to outline the preliminary schedule of events in the planning and design process. NPS shall provide the Signatories and Consulting Parties a written schedule of events in the planning, design and review process as soon as practicable.
3. Upon submission of any design plans, including proposed changes to the Olin Partnership concept, to CFA, NCPC, or HPRB at each stage of review and approval, NPS shall notify the representatives of the Signatories and Consulting Parties who have concurred with this Agreement (Concurring Parties) and shall make such plans and supporting documentation available to them for review, unless identical plans have already been reviewed by the Signatories and Concurring Parties in accordance with this Stipulation. This review shall be based upon the Undertaking's effects on historic properties and its conformance with the Secretary's Standards pursuant to Stipulation 1. Should any Signatory or Concurring Party respond within five (5) calendar days of NPS notification with comments for further

consideration, including alternative approaches to meeting the Secretary's Standards, NPS shall invite all Signatories and Concurring Parties to attend a consultation meeting within the following five (5) calendar days to address or resolve concerns. If parties choose not to attend the meeting within said five (5) calendar days, written comments will be accepted during that period. NPS shall consider the views of all Signatories and Concurring Parties and document its consideration of these views prior to review of a design proposal by the CFA, NCPC, or HPRB.

4. Prior to submission of preliminary design plans for the Undertaking to NCPC for approval in accordance with NCPC's Project Plans Submission Requirements, and subject to waiver as provided therein, NPS shall submit to NCPC documentation demonstrating significant progress in the consultation process for the Undertaking described in Stipulations 1, 2 and 3 and shall have completed the supplemental EA and final determination of the project's environmental impacts in accordance with the NCPC action approving the design concept for the Undertaking dated February 7, 2002.
5. Prior to submission of preliminary design plans for the Undertaking to NCPC for approval, NPS shall provide to the Signatories and Concurring Parties all of the documentation that has been accepted by the NPS for inclusion in the Washington Monument Grounds Cultural Landscape Report and Monument Lodge Historic Structures Report described in Stipulation 8 and all of the documentation that has been accepted by the NPS for inclusion in the structural and geotechnical studies described in Stipulation 9. The NPS shall use its best efforts to complete such reports in accordance with schedule described in Stipulation 6 and concurrent with submission of preliminary design plans to NCPC.
6. As design development proceeds, NPS shall identify components of the Undertaking as they come up for review pursuant to Stipulation 3 of this Agreement, including changes to previously reviewed components of the Undertaking, and shall notify the Signatories and Concurring Parties of the schedule for all applicable reviews of such components by CFA, NCPC, HPRB and the Signatories and Concurring Parties.

7. Signatories and Concurring Parties shall provide NPS with the name and contact information of the individual who will represent the organization or agency for purposes of review pursuant to the Agreement and shall inform the NPS of any change in representation during the course of this Agreement. Signatories and Concurring Parties are urged to have these individuals, or a representative with the authority to speak for their organizations or agencies, available to attend all meetings referenced in Stipulation 3.
8. Upon acceptance by the NPS for purposes of informing decisions relating to the Undertaking, copies of the Washington Monument Grounds Cultural Landscape Report and the Monument Lodge Historic Structures Report currently under development shall be provided to the Signatories and Consulting Parties.
9. As they are accepted by the NPS for purposes of informing decisions relating to the Undertaking, copies of studies pertaining to the structural and geotechnical aspects of any underground construction and alteration to the Monument's foundation shall be provided to the Signatories and Consulting Parties.
10. NPS may identify additional studies to be undertaken. In such cases, NPS shall notify the Signatories and Consulting Parties of the schedule for completing any such studies and shall provide copies of the studies to the Signatories and Consulting Parties, as they are accepted by the NPS.
11. NPS will make its best efforts to provide to Signatories and Consulting Parties in a timely fashion documents pursuant to this Agreement. NPS may, at its discretion, withhold documents relating to this Undertaking in accordance with any applicable laws.
12. NPS, in consultation with the SHPO, may invite additional Consulting Parties to participate in this Agreement. Such Consulting Parties may become Concurring Parties by signing a copy of this Agreement and returning it to the NPS.

13. Participation or concurrence by NCPC in this Agreement or the process described herein shall not obligate or in any way affect the discretion of NCPC in reviewing any aspect of the Undertaking at any stage in the review process pursuant to D.C. Code § 4-532.
14. The Signatories may amend this Agreement by unanimously agreeing to the amendment(s) in writing. NPS, the SHPO or the Council may unilaterally terminate this agreement by providing fifteen (15) days notice to all Signatories and Concurring Parties. Upon such termination, NPS will comply with Section 106 through a new programmatic agreement or through the process under Subpart B of 36 CFR Part 800 (2001).
15. NCPC may withdraw its participation in the Agreement and revoke its designation of lead agency status, and any Concurring Party may withdraw from consultation pursuant to this Agreement, at any time upon written notice to all Signatories and Concurring Parties.
16. The NPS shall seek and consider the views of the public on this Undertaking, in conjunction with public comment on the EA, and shall make information with regard to the Undertaking available to the public through a variety of means, such as mailings, print media, Internet, and reading copies at NPS, NCPC and/or other locations.
17. This Agreement constitutes the entire agreement and understanding among the Signatories and Concurring Parties relating to the Undertaking.

Pursuant to 36 CFR § 800.14, by executing and implementing the Agreement, NPS shall be deemed to have taken into account the effects of the Undertaking on historic properties and to have provided the Council a reasonable opportunity to comment in accordance with Section 106 of the NHPA for all components of the Undertaking.

NATIONAL PARK SERVICE

By: **SIGNED BY DON MURPHY** Date **4/4**
Fran Mainella, Director

By: **SIGNED** Date **4/4**
Arnold Goldstein, Superintendent, National Capital Region

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date _____
John L. Nau, III, Chairman

DISTRICT OF COLUMBIA HISTORIC PRESERVATION OFFICER

By: **SIGNED** Date _____
Gregory McCarthy, Historic Preservation Officer

NATIONAL CAPITAL PLANNING COMMISSION

By: **SIGNED** Date **4/4**
John V. Cogbill, III, Chairman
Concur:

NATIONAL COALITION TO SAVE OUR MALL

By: _____ Date _____
Judy Scott Feldman, Chair

COMMITTEE OF 100 ON THE FEDERAL CITY

By: _____ Date _____
Don Hawkins

WASHINGTON NATIONAL MONUMENT SOCIETY

By: _____
James Symington, First Vice President

Date _____

D.C. PRESERVATION LEAGUE

By: _____
T. David Bell, AIA, President

Date _____

NATIONAL TRUST FOR HISTORIC PRESERVATION

By: _____
Richard Moe, President

Date _____

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

By: _____
Marcia F. Argust, Director, Public & Government Affairs

Date _____

GUILD OF PROFESSIONAL TOUR GUIDES

By: _____
Maureen Cyron, Government Liaison

Date _____

ADVISORY NEIGHBORHOOD COMMISSION 2A

By: _____
Dorothy Miller, Commissioner, ANC-2A

Date _____

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10.3 List of Preparers

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